

HELEN YAFFE



CHE GUEVARA

THE ECONOMICS OF REVOLUTION

Foreword by Professor Lord Meghnad Desai



Che Guevara

Also by Helen Yaffe

Che Guevara's Enduring Legacy: Not the Foco, but the Theory of Socialist Transition, *Latin American Perspectives*, March 2009.

Review of Diana Raby: Democracy and Revolution: Latin America and Socialism Today, *Bulletin of Latin American Research*, January 2009.

Ernesto 'Che' Guevara: Rebel against Soviet Political Economy. Paper at the Economic History Review conference booklet, University of Exeter, England, March 2007.

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Helen Yaffe

palgrave
macmillan



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Softcover reprint of the hardcover 1st edition 2009 978-0-230-21820-8

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First published 2009 by
PALGRAVE MACMILLAN

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Palgrave Macmillan in the US is a division of St Martin's Press LLC, 175 Fifth Avenue, New York, NY 10010.

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ISBN 978-0-230-21821-5
DOI 10.1057/9780230233874

ISBN 978-0-230-23387-4 (eBook)

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A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

10 9 8 7 6 5 4 3 2 1
18 17 16 15 14 13 12 11 10 09

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Acknowledgements

Between autumn 1995 and summer 1996 I lived in Cuba with my sister – an austere time during the Special Period. Cubans dug deep to find what they needed to survive, as individuals and as a socialist society. Thousands of Cubans, young and old, carried out voluntary labour in the fields and in the cities, determined that their Revolution would survive the crisis generated by the collapse of the socialist bloc and exacerbated by the punitive US blockade. This gave us a first glimpse of the important relationship between consciousness and production which lies at the heart of the economics of revolution and is central to understanding Che Guevara's work in Cuba.

The book owes its content to the many protagonists who worked alongside Guevara in Cuba in 1959–65 and who patiently responded to my questions. Without them it would not have been possible. This history is almost as much their own as it is Guevara's. Orlando Borrego Díaz showed endless patience and encouragement, as the list of interviews in the bibliography demonstrates. As Guevara's deputy in Cuba, he provided a fascinating insight into the challenges they faced in the process of socialist transition. Ángel Arcos Bergnes offered me support and material from his own archive, and responded to my endless enquiries with the enthusiasm for which Guevara had praised him. Other important interviewees who allowed me to return for a second interrogation include Enrique Oltuski, Edison Velázquez and Tirso Sáenz. These revolutionaries share an exciting history as part of Guevara's inner circle and their cooperation was motivated by a commitment to Guevara's theory and practice, and the wish to disseminate knowledge about it.

Several Cuban compañeros from the younger generation encouraged and facilitated the research in Cuba. Particularly, I would like to mention Rogelio Polanco Fuentes who, despite his overwhelming responsibilities as director of *Juventud Rebelde* among other posts, expressed great interest in the writing of this book and did more than I could have expected to provide contacts for me and organise interviews with revolutionary leaders. The Che Guevara Study Centre opened its archives and Tatiana Martínez Hernández gave me her own material and friendship. Kenia Serrano Puig and Nancy Coro Aguiar showed concern, friendship and support. To my adopted Cuban families – those of Yani, Mongui and Nilda – I am eternally grateful for hospitality during my frequent sojourns on the island. I am grateful to the Cuban publishing house Ciencias Sociales for permission to use material from their books, to

Borrego for permission to devour the meeting transcripts and internal reports he compiled in 1966, and to *Granma* newspaper for providing me with the cover photo from their archives.

In London the first acknowledgement goes to Dr Colin Lewis at the London School of Economics (LSE), who has defended the intellectual integrity and authenticity of my endeavour since the outset and guided me towards academic discipline. Likewise, I am obliged to Professor Meghnad Desai, also at the LSE, who overwhelmed me with useful references and has written the foreword for this book, and to Professor James Dunkerley, formerly of the Institute for the Study of the Americas, who advised me on getting into print. The research which led to this book was funded by the Economic and Social Research Council. My gratitude goes to Taiba Batool for being so enthusiastic about this publication, and to all her colleagues at Palgrave Macmillan who have steered me through the editorial process, along with the team at Chase Publishing Services, and Carol Brickley who helped me to compile the index. I am indebted to Paul Bullock and David Yaffe for stimulating discussions about the theoretical material. Appreciation goes to all my compañeros who have shown that moral incentives can even function ‘in the belly of the beast’. I am grateful for the unconditional love and encouragement received from Daniesky, Susie and Leo, and to Max and Ella who bring me much joy. Finally, thanks to my parents Ann and David, who, in the words of Guevara, are ‘true revolutionaries motivated by great feelings of love’, who brought me up to think critically and, most importantly, to care.

Foreword

Meghnad Desai

GUEVARA THE POLITICAL ECONOMIST

Ernesto ‘Che’ Guevara is a romantic figure. He is perhaps the best loved or at least the most paraded global icon that the Revolutionary left can claim. Even more than the bearded founders of the movement, Che Guevara caught the imagination of the 1968 generation. He was young, handsome, fashionable and then he died in a jungle in Bolivia fighting American Imperialism single-handedly. So he went on posters and T-shirts and adorned many walls and waists. He was ‘one of us’ – we, of course, the torchbearers of the Red Revolution. From our comfortable bedsits and even our mortgaged houses we could see ourselves in guerrilla fatigues, cigar chomped in our mouths, battling the enemy just as he did. Then we went on to have another drink.

In adoring Che Guevara the radical chic of the Sixties divorced him from his milieu which was the Cuban Revolution. The daily unglamorous tasks of keeping the Revolution alive, to feed the citizens, clothe them and nurse them, to meet the expectation that a socialist revolution is not just about guns and about fighting American power, but about achieving prosperity, more than capitalism can promise for the mass of the people. This is the boring task of the Revolutionary.

Socialist Revolutions have only occurred thus far in poor countries characterised by an underdeveloped capitalism with low productivity, insufficient accumulation, feudal and monopolistic concentration of power and an impatient populace who support the Revolution with hopes of something better, quickly. The fact that profits come from exploitation of workers is axiomatic for the Revolutionary. But once the Revolution has happened and the exploiter has been removed, comes the crucial discovery. Even if all that profit reverts to the workers, it is still insufficient to improve matters much. The problem of underdevelopment is not just that there is exploitation, but that there is insufficient output to meet basic needs even if all share equally. The problem of the Revolution is to use the methods of capitalism – hard work, efficiency, elimination of waste and idleness, discipline at work – to accomplish the gains which socialism promises.

It fell to Guevara as one of the principal members of the cadre to think about this problem. In a way, it is the task of how to be a good capitalist

for socialist ends. But it is also a task of examining whether the methods of socialism can be different and indeed better in terms of raising productivity than the methods of capitalism. This problem was first seen clearly by Marx in his *Critique of the Gotha Programme*, his one and only ‘policy’ paper, in which he commented on the draft programme of the newly united Social Democratic Party of Germany which had claimed to follow his teachings. His prose is tough and he discards the delusions of the ‘leftists’.

Right at the beginning, he denounces the proposition that ‘Labour is the source of all wealth’. All product is not the product of labour, he warns at the outset. Nature is just as much the source of use-values. Further, there is always the task of replacing the wear and tear of equipment – of constant capital – from the available output. There is also the task of reinvesting surplus for raising future output. Marx, in other words, tells the Workers’ Party that the realities of capital accumulation are inescapable even if political power passes to the workers.

Lenin was the first leader of a Workers’ Party who had to face the question concretely in an economy ravaged by war and famine. His speeches and writings in the 1917–23 period are full of reflections on the problem of how a transition from capitalism to something better has to be accomplished. Thus he writes:

Keep regular and honest accounts of money, manage economically, do not be lazy, do not steal, observe strictest labour discipline – it is these slogans justly scorned by the revolutionary proletariat when the bourgeoisie used them to conceal its role as an exploiting class that are now, since the overthrow of the bourgeoisie, becoming the immediate and principal slogans of the movement.¹

Cuba was, of course, *sui generis* as a socialist country. It was the first country in Latin America, a mono-crop economy dependent on sugar and an enclave of the USA dependent for the purchase of sugar and for income from tourism, etc. It was also only an island. Thus, while China was also poor and under-developed, it was a continental economy. Russia in 1917 was a large economy with much power. Cuba had to work hard for a double independence – from the USA and from international capitalist relations.

It is in this aspect that Helen Yaffe has put us all in her debt. She has dealt with Che Guevara’s work as a political economist charting new ground while fighting on two fronts. She has delved into the archives in Cuba and also drawn on the broader literature on the subject of the economics of transition. The debate on the law of value which reverberated through the early years of the Cuban Revolution is covered with a thoroughness and understanding which will stand the test of time. It is a topic which has been covered only partially,

if at all, in previous treatments of the Cuban economy. By taking up the role of Guevara as a central figure in these debates, both as a participant and an executive leader, she has illuminated both the process of policy making and the crucial decisions which had to be made.

As I write this, capitalism is once again going through a traumatic phase. It is not likely to lead to cataclysmic change, but it will open up the discussion of alternatives and how we can bring them about. Helen Yaffe's book is thus both timely and of long-lasting interest.

List of Acronyms and Abbreviations

AFS	(Sistema de Autofinanciamiento) Auto-Financing System
AGI	(Administración General de Ingenios) General Sugar Mill Administration
ALBA	(Alternativa Bolivariana para los Pueblos de Nuestra América) Bolivarian Alternative for the Americas
BANCEC	Bank of Foreign Commerce
BANDES	Bank of Economic and Social Development
BANFAI	Agricultural and Industrial Development Bank
BFS	(Sistema de Financiamiento Presupuestario) Budgetary Finance System
CANEC	(Consultaría de la Asociación Nacional de Economistas y Contadores) Consultancy of the National Association of Economists and Accountants
CCP	Cuban Communist Party
CENIC	(Centro Nacional de Investigaciones Científicas) National Centre for Scientific Research
CIA	Central Intelligence Agency (US)
CILOs	(Comités de Industrias Locales) Committees for Local Industry
CMEA	Council for Mutual Economic Assistance
CODIAD	(Comisión de Disciplina Administrativa) Administrative Disciplinary Commission
CTAs	(Comités Técnico Asesor) Advisory Technical Committees
CTC	(Confederación de Trabajadores de Cuba [pre-1959]) Cuban Workers Confederation
CTC	(Central de Trabajadores de Cuba [post-1959]) Cuban Workers' Central Union
CUC	(Peso Cubana Convertible) Cuban convertible peso
DR	(Directorio Revolucionario) Revolutionary Directorate
EC	(Empresa Consolidada) Consolidated Enterprise
ECLA	(Comisión Económica para América Latina) Economic Commission for Latin America
EPS	(Sistema de Perfeccionamiento Empresarial) Enterprise Perfection System
FAR	(Fuerzas Armadas Revolucionarias) Revolutionary Armed Forces

FEN	(Frente Estudiantil Nacional) National Student Front
FEU	(Federación Estudiantil Universitaria) University Students Federation
GDR	German Democratic Republic
ICDIQ	(Instituto Cubano para el Desarrollo de la Industria Química) Cuban Institute for the Development of the Chemical Industry
ICDM	(Instituto Cubano para el Desarrollo de Maquinaria) Cuban Institute for Machinery Development
ICEA	(Instituto Cubano de Estabilización de Azúcar) Cuban Institute for the Stabilisation of Sugar
ICIDCA	(Instituto Cubano de Investigaciones de los Derivados de la Caña de Azúcar) Cuban Institute of Research into Sugar Cane Derivatives
ICIMM	(Instituto Cubano de Investigaciones de Minería y Metalurgia) Cuban Institute of Mineral and Metallurgy Research
ICIT	(Instituto Cubano de Investigaciones Tecnológicas) Cuban Institute for Technological Research
ICM	(Instituto Cubano de Minerales) Cuban Mineral Institute
ICP	(Instituto Cubano de Petróleo) Cuban Petroleum Institute
ICRM	(Instituto Cubano de Recursos Minerales) Cuban Institute of Mineral Resources
IMF	International Monetary Fund
INRA	(Instituto Nacional de Reforma Agraria) National Institute of Agrarian Reform
ISI	Import Substitution Industrialisation
JUCEI-local	Board of Local Coordination, Execution and Inspection
JUCEPLAN	(Junta Central de Planificación) Central Planning Board
M26J	(Movimiento 26 de Julio) 26 July Movement
MINAG	(Ministerio de Agricultura) Ministry of Agriculture
MINAL	(Ministerio de Alimentación) Ministry of Foodstuffs
MINAZ	(Ministerio de Azúcar) Ministry of Sugar
MINCEX	(Ministerio de Comercio Exterior) Ministry of Foreign Trade
MINFAR	(Ministerio de las Fuerzas Armadas Revolucionarias) Ministry of the Revolutionary Armed Forces
MININD	(Ministerio de Industrias) Ministry of Industries
MINTRAB	(Ministerio de Trabajo) Ministry of Labour
MINTRANS	(Ministerio de Transporte) Ministry of Transport
MNR	(Movimiento Nacionalista Revolucionario) Revolutionary National Movement

MTS	Machine and Tractor Stations
NBC	(Banco Nacional de Cuba) National Bank of Cuba
NEP	New Economic Programme (USSR)
NGO	non-governmental organisation
ORI	(Organizaciones Revolucionarias Integradas) Integrated Revolutionary Organisations
P&G	Procter & Gamble
PSP	(Partido Socialista Popular) Popular Socialist Party
PSUV	(Partido Socialista Unido de Venezuela) United Socialist Party of Venezuela
PURS	(Partido Unido de la Revolución Socialista) United Party of the Socialist Revolution
UJC	(Unión de Jóvenes Comunistas) Union of Young Communists

1

Introduction

Popular biographies, memoirs, academic articles and political tracts have focused on Ernesto ‘Che’ Guevara’s military commitment to revolutionary social change, the influence of his travels in Latin America, and his participation in guerrilla warfare in Cuba in 1956–58, the Congo in 1965 and Bolivia in 1966–67. Guevara’s written accounts of the war against Batista and the publication of *Guerilla Warfare* in 1961 to promote his *foco* theory – that a ‘vanguard’ of armed fighters could spark successful revolutionary movements throughout Latin America – contributed to his narrow characterisation as a rebel commander and armed internationalist. Debate over the *foco* theory and about the Cuban road to socialism, fuelled by attempts to apply it elsewhere, cemented Guevara’s immortalisation as an armed revolutionary. His disappearance from Cuba, his farewell letter to Fidel Castro in 1965, his message to the Tricontinental calling for ‘two, three, many Vietnams’ and finally his capture and execution in Bolivia where he was leading a *foco* group in 1967, have placed blinkers on history, blinding it to other aspects of this multifaceted man. His Argentinian nationality and his death in Bolivia Latin-Americanised the impact of this image – his contribution to the war in Cuba was reminiscent of that continent’s independence heroes, such as Venezuelan Simón Bolívar and Dominican Máximo Gómez who crossed national boundaries to liberate ‘our America’ – thus strengthening Guevara’s claims about the universality of the Cuban model.

Four decades after his death, Guevara is still both admired and derided, testimony to the fascination his persona continues to hold. Yet his most significant contribution remains largely unknown. His life and work as a member of the Cuban government from 1959 to 1965 have received scant attention from historians, social scientists and other commentators. Major biographies detail Guevara’s youth and military command, but barely touch on his contribution to industrial organisation and economic management in Cuba or to socialist political economy debates. Readers have learned little about Guevara’s work as president of the National Bank, head of the Department

of Industrialisation and Minister of Industries. These contributions have not been adequately assessed. Without knowledge of his approach the lessons that can be drawn from Guevara's work are lost.

Those who have recorded Guevara's role in the revolutionary government of Cuba have focused on his advocacy of moral incentives. Often on the basis of a few selective quotes repeated from a handful of his published articles or speeches, Guevara has been turned into a one-dimensional caricature of himself – a dreamer upholding an 'idealist' revolutionary philosophy. Voluntary labour and socialist emulation have been characterised as both means and ends, rather than as part of a complex of policy instruments designed to increase productivity and efficiency while undermining the operation of capitalist mechanisms in the transition to socialism.

The problem facing the Cuban Revolution after 1959 was how to increase productive capacity and labour productivity in conditions of underdevelopment and in transition to socialism, without relying on capitalist mechanisms that would undermine the formation of a new consciousness and of social relations integral to socialism. Guevara set out to meet this challenge. Far from the image of the romantic guerrilla fighter or the idealist dreamer, this book reveals an intellectual who studied Karl Marx's *Capital* with scientific rigour. His practical policies were the product of three lines of enquiry: the study of Marx's analysis of the capitalist system; engagement in contemporary socialist political economy debates; and recourse to the technological and administrative advances of capitalist corporations. Guevara challenged the way in which Marxism had been interpreted and applied in the socialist bloc, condemned the dogmatism of the USSR and set up an alternative economic management system in Cuba. Through his systematic critique of Soviet political economy, by 1966 he was able to conclude that without a dramatic policy change, capitalism would return to the Soviet Union.

Between 1959 and 1961, Guevara was central in driving through the structural changes which transformed Cuba from semi-colonial underdevelopment to independence and integration into the socialist bloc. His experiences in the military, political and economic spheres all fed into the creation of the Budgetary Finance System (BFS) of economic management developed in the Ministry of Industries (MININD) from 1961 to 1965, which is the main focus of this book. This system was the fruit of a dynamic interaction between theory and practice, emerging first as a practical measure to solve concrete problems in industry, but gaining a theoretical base as Guevara immersed himself in the study of Marxism, initiating the Great Debate in 1963 about which economic management system was appropriate to Cuba. Based on the productive and managerial techniques of US corporations, the BFS was an economic management system unique to socialism.

This book is first and foremost an economic history, rescuing the story of the MININD from oblivion. It is beyond the scope of this work to provide an historical narrative of the Revolution, of Cuban economic development, of the introduction of planning or of Guevara's views on international trade. Its principal contribution is to record Guevara's role in several crucial areas: promoting education and training; establishing accounting, investment and supervision systems; forging workers' participation in management; founding research and development institutes to apply science and technology to production; and formulating policies to raise consciousness and commitment to the Revolution whilst institutionalising psychology as an economic management tool. Guevara set up nine research and development institutes which included 'green medicine', nickel production, oil exploration, sugar byproducts and the chemical industry. He experimented with computerised accounts for industry, formulated a new salary scale, promoted workers' inventions and innovations, drove the mechanisation of agriculture, introduced the psychology of social work, promoted the concept of work as a social duty and created an apparatus for workers' management of industry. Little is known about his role in these fields, despite the fact that many of these projects have evolved into major areas of economic activity and social organisation in Cuba today. In presenting new material, the intention is not to provide a definitive account or to answer all the theoretical questions it throws up. Rather it is to offer a new starting point for further debate – to move on from simplistic arguments about Guevara's idealism or the 'mismanagement' of the Cuban economy by presenting rich detail of the enormity of the challenges faced by the Cuban revolutionaries and the complexity of their search for solutions.

For 50 years writing on Cuba has been shaped by the Revolution of 1959. Revolutionary movements present a challenge, not just to the institutions against which they rise up in order to tear them down, but also to theoretical and philosophical interpretations of the world, human society and development. Academics and commentators are probed by the bloody hand of revolution as they sit at their desks, pens poised to interpret, analyse, narrate and predict. As English historian E. H. Carr explained: 'History is movement; and movement implies comparison.' Rather than uncompromising absolutes like 'good' and 'bad', he noted, historians use comparative words like 'progressive' and 'reactionary', reflecting their own moral judgements in the attempt: 'to define different societies or historical phenomena not in relation to some absolute standard, but in their relation to one another'.¹ Carr recognises 'the impossibility of total objectivity'.²

The post-1959 literature on Cuba has been particularly subject to interpretative bias for several reasons: the historical proximity of the Revolution, the context of a broader ideological confrontation between capitalist and

socialist world systems, and because the geographical proximity of Cuba to the United States brings those conflicting ideologies together on a geographical battlefield. The stakes remain high. Cuban-American sociologist Nelson Valdés complained that ‘The literature on Cuba has been permeated by so much political polemic that scholars have preferred to remain silent about the method they have utilized or the paradigm guiding their investigation and analytical logic.’³

English-language literature on Cuba is dominated by ‘Cubanology’ an academic school which is central to the ideological war waged against Cuban socialism. The roots of Cubanology lie in the defeat of the US government-sponsored Bay of Pigs invasion in April 1961 which demonstrated that the Revolution had achieved a degree of permanency. It was perceived to be a more complex enemy which must be studied and understood in order to be defeated. That year alone, two academic investigations were commissioned by the Pentagon and similar studies were organised by the Special Operations Research Office of the American University.⁴ By the mid 1960s, a centre for Cuban studies was effectively formed by the CIA. Its objectives were to compile information for planning future actions against the Revolution and to depict the Revolution negatively for a global audience.⁵ This meant denying all positive achievements of the Revolution, deriding official Cuban sources of information and disseminating misinformation about life in Cuba. Academic institutes were set up to support this strategy. The Center for Latin American Studies, founded at the University of Pittsburgh under the National Defense Education Act in 1964, came to dominate Cuba Studies. In 1969, the Institute of Cuban Studies was established at the University of Miami for Cuban exile scholars who ensured cohesion by discussing their work within the group before publication.⁶ The school labelled itself ‘Cubanology’ from April 1970, following a conference organised by the US Library of Congress which resolved to write more sophisticated and supposedly ‘impartial’ material on Cuba. Some academics have promoted strategies to destroy the socialist Revolution by incorporating Cuba into the capitalist world market, while others advocate counter-revolution from within or outside the island. ‘Academic’ events anticipating ‘transition’ are given legitimacy by the participation of Cubanologists. A key sponsor of Cubanology is the extreme right-wing Cuban American National Foundation whose Bureau of Conferences has included respected academics such as Hugh Thomas and Irving Horowitz.

The key tenets of Cubanology are: the Revolution of 1959 presents a rupture in Cuban history; Fidel (and now Raul) Castro is synonymous with the Revolution – personally dominating domestic developments and foreign policy; there is no democracy and civil society is repressed; Cuban economic growth since 1959 has been negligible, largely due to mismanagement of the

economy; and pre-1959 dependency on the US was replaced by dependency on the USSR until its collapse in 1990.⁷ Sources from within Cuba are dismissed as ‘ideological’ or unreliable – as if scholars and workers on the island lack the capacity for reflective thought and were mere sloganeering bureaucrats, repeating official declarations. Dissidents, on the other hand, enjoy a special status in the western academic community, regardless of their previous ideological or institutional position. Once they renounce their political commitment to the Revolution and sign up to undermine its viability, then ‘Overnight, they become independent intellectuals with the keys to credibility in their pockets’, noted Cuban political scientist Rafael Hernández.⁸

Hernández went on to complain that ‘Cuba is not the transfiguration of a doctrine, nor the reification of a totalitarian philosophy. It is a country. Little is written and even less is published about this real country.’⁹ Since the 1970s the Cuban government has improved access to its society and archives for foreigners – eager to disseminate information about its economic and social welfare successes. This, and the failure of Cubanology to explain so much of what happens in Cuba, has stimulated the emergence of a new approach to Cuba studies in which analysts have stood back from the ideological battle between capitalism and socialism. More sympathetic to the goals and achievements of the Revolution, ‘Cubanists’ from across the social sciences began to fill the void – writing about Cuba as a country, not a doctrine.¹⁰ While less overtly linked to a political regime or ideological battle, many Cubanists still carry the constraints of their own social and political values and assumptions. When scholars who accept the political-economic model of liberal democracy assess Cuba they tend to search for what they recognise. Defining Cuba in relation to their own society’s standards, as E. H. Carr warned, they find most elements of that model missing and often conclude the Cuba is deficient – because Cuban society is developing according to different precepts.

The research carried out for this book was based on new Cuban sources: archival material including manuals, annual reports, personnel assessments, management board reports, factory inspection reports, economic perspectives documents and, most importantly, transcripts of the internal bimonthly meetings of Ministry of Industries led by Guevara. It has consulted material circulated in Cuba only, including technical, economic and theoretical journals, speeches, unpublished conference papers, articles, presentations and contemporaneous Cuban newspapers and magazines, and oral sources, including 60 personal interviews with nearly 50 of Guevara’s closest collaborators and another twelve oral sources gathered from presentations and seminars.¹¹ As a result, the book tells Guevara’s story from the perspective of the revolutionaries, and for that there will be those who accuse the work of lacking ‘critical perspective’ – an accusation rarely levelled at scholars who censor the voice

and reason of the Revolution. Nonetheless, as the bibliography shows, a full range of secondary sources was consulted.¹²

This does not deny the possibility of omissions. History is dictated by the victors – in this case those who are alive in Cuba today and were interviewed for this work. Consequently, aspects of Ministry of Industries' history may be underexplored because the research was based on the material available. Guevara's closest collaborators were profoundly affected by his methodological approach to problems which emphasised honesty in assessment, self-criticism and the constant struggle for self-improvement. Indeed, determined to undermine the commercial and commodified image of the revolutionary idol, interviewees revealed a more complex and difficult man – demanding and unrelenting, sometimes cutting, but never trivial. Their richly humane narratives capture the dynamism of Guevara's experience, offering an insight into how the revolutionary process shaped the lives and value judgements of those who worked alongside him. Guevara embraced debate as a tool in the process of searching for solutions to practical problems, avoiding formulaic prescriptions. Archive documents give testimony to these discussions.

Each chapter on Guevara's work as Minister of Industries summarises the socioeconomic situation the young revolutionary government encountered in the different areas of development. Nonetheless, it is useful to start out with an overview of the situation confronting the young revolutionaries who came to power in 1959. The tasks they set themselves cannot be divorced from the circumstances they faced. However, the very nature of the Cuban economy in 1950s Cuba itself has been the source of fervent debate, connecting as it does to arguments about the success or failure of the post-1959 development strategy. For example, Cubanologist Jaime Suchlicki claims that 'Batista encouraged the growth of Cuban capital and his return to power stimulated foreign investment ... By the end of Batista's rule, Cuba's economy was well into what Walter Rostow has characterized as the take-off stage.'¹³ In contrast, Cubanist Fred Judson describes the structural weakness of the Cuban economy: 'The general situation can be described as a multi-layered series of crises. Long-term crises characterized the economy, which had a surface and transient prosperity.'¹⁴ In the first interpretation, the Revolution interrupted healthy capitalist growth, in the second it was a precondition to resolving the contradictions obstructing development by ending Cuba's subjugation to the needs of US capitalism.

In the 1950s Cuba had one of the highest per capita incomes in Latin America. Havana was a modern capital city with relatively high standards of living, enjoying a consumer boom in the post-Second World War period, importing millions of dollars-worth of cars and household durables. But the bittersweet prosperity was largely dependent on the rise in sugar prices since the 1940s. 'War prosperity has created new standards of living for many of

Cuba's people', declared the World Bank in its 1951 *Mission to Cuba* report. It warned the government to use that prosperity to reduce dependence on sugar by diversifying the economy to avoid social chaos when the boom ended.¹⁵ Not only was Cuba a mono-crop economy, but it was also a 'free enterprise' economy dominated by US investments and trade.

US determination to colonise Cuba had a strong economic rationale before the US stole away the independence the Cubans had won from Spain in 1898.¹⁶ The penetration of US capital had begun decades before the US occupied Cuba. Already by the 1870s, 75 per cent of Cuban sugar was shipped to the US.¹⁷ In 1896, US investments in Cuba were estimated at \$50 million. In 1929, following the granting of Cuba's 'independence' and the implementation of the Platt Amendment in 1901, this had increased 18-fold to \$919 million – 62 per cent of which was invested in agriculture, mainly the sugar industry.¹⁸ The majority of imports flowing into Cuba came from the US, including 95 per cent of capital goods. The US government ensured that the island remained on a life-support machine, and by allocating it an annual sugar quota it consolidated Cuba's economic dependence on the US. This was secured by political and military interference, including the return of US troops to the island from 1906 to 1909, again in 1912, and from 1917 to 1923.

Cuba was the largest producer and exporter of sugar in the world. Sugar production and all its byproducts accounted for 86 per cent of Cuban exports in late 1940s – 80 per cent of which were shipped to the US. Sugar companies controlled 75 per cent of the arable land, half of which they left fallow, and employed a quarter of Cuba's workforce from a population of around 6 million. However, only 25,000 workers had employment all year while half a million seasonal workers struggled to subsist between harvests. Poverty, unemployment and underemployment were inherent aspects of Cuba's sugar dominated industry, forcing an army of unemployed workers to sell its labour cheaply as cane cutters.¹⁹

In the 1920s, US companies produced two-thirds of Cuba's sugar, but with the Great Depression US capital retracted and the industry increasingly fell into domestic ownership until, by the 1950s, Cuban businesses owned three-quarters of the island's sugar mills, producing nearly 60 per cent of the country's sugar.²⁰ Between 1929 and 1932, the peso value of Cuban sugar production collapsed from around \$200 million to \$40 million, the result of falling prices and output. The industry was saturated and stagnant, so when US investment poured back into Cuba after the Second World War it was channelled principally into public utilities and to a lesser extent into petroleum, manufacturing, mining and other industries. Consequently, in the 1950s Cuba's power, railway, highway, port and communications facilities were among the most developed in Latin America.²¹ Cuba was the third-

greatest recipient of US direct investments in Latin America, receiving \$713 million of direct investment in 1955. US investors controlled 90 per cent of the telephone and electric services, 50 per cent of public service railways and 40 per cent in raw sugar production.²² After seizing power in a military coup in 1952, Batista encouraged foreign investment in the mining sector, in tourism, on public works projects and in the cattle industry. But this increase in foreign investment did not mean, as Suchlicki claims, that Cuba's economy was 'taking off'. For example, oil refineries owned by Standard Oil, Texaco and Shell, which together added over \$50 million per year to Cuban output statistics, employed fewer than 3,000 people, and the majority of their higher positions were held by foreigners.²³ Most of the wealth from foreign corporations was repatriated. As French philosopher Jean-Paul Sartre remarked: 'What I had took to be signs of wealth, were, in fact, signs of dependence and poverty. At each ringing of the telephone, at each twinkling of neon, a small piece of a dollar left the island and formed, on the American continent, a whole dollar with the other pieces which were waiting for it.'²⁴ Meanwhile, less than 20 per cent of imports were consumed by the mass of the people – mainly foodstuffs and medicines – while the remaining 80 per cent of imports, which totalled \$770 million in 1957, went to Cuban elites and large corporations.²⁵

From a development perspective, the most striking phenomenon of Cuba's economy was the inequality between the conspicuous consumption of Havana and the rest of the island. In 1957, the Catholic University Association reported: 'Havana is living an extraordinary prosperity while rural areas, especially wage workers, are living in unbelievably stagnant, miserable, and desperate conditions.'²⁶ Nearly 35 per cent of the working population was unemployed. 'The specter of unemployment affects all thinking on labor and manpower problems in Cuba', noted the US government report, adding that 'Cuba has been fortunate that chronic unemployment has not created a more critical situation.'²⁷ Only 3 per cent of rural Cubans owned the land they worked and the average annual income of the largely rural population was \$91 – one-eighth of that in Mississippi, the US's poorest state. Inevitably, given massive unemployment, low salaries and little access to land, only 4 per cent of Cubans in the rural areas ate meat, only 1 per cent ate fish, 3 per cent ate bread, 11 per cent had milk after weaning and less than 20 per cent ate eggs.²⁸ More than 75 per cent of rural dwellings were wooden huts, and only 2 per cent of rural Cubans had running water and 9 per cent had electricity.²⁹ Some 24 per cent of the population was illiterate, life expectancy was 59 years and infant mortality was 60 per 1,000 live births.³⁰ Racist discrimination was rife and institutionalised.

Yet in its structural underdevelopment and dependence on foreign capital Cuba was no worse off than most Latin American nations. In the 1930s, Latin

American economies structured around primary commodity exports to the US and Europe and dependent on capital and industrial goods from those countries began to implode with the devastating impact of the Great Depression.³¹ Throughout the continent the response was the emergence of 'economic nationalism' which sought to reduce dependency on foreign investments and trade and foster domestic markets and balanced growth throughout the economy. In 1948, the Economic Commission for Latin America (ECLA) was founded by the United Nations. Rejecting the liberal doctrine of 'comparative advantage', ECLA argued that underdevelopment was perpetuated by the pattern of international trade because raw materials and agricultural goods produced in the 'periphery' – the underdeveloped countries – were worth less than industrial goods imported from the 'centre' – the advanced capitalist countries. The poorer countries could never catch up or compete because they lacked technology and capital.

ECLA theorists called for international agreements to reverse this structural dependency by stimulating manufacturing and industry in Latin America. In this model, the nation state took over responsibility for creating the conditions necessary to encourage entrepreneurship and accumulation. The result was a development strategy known as Import Substitution Industrialisation (ISI) – a push to replace imports with domestically produced alternatives. Latin American governments raised tariffs on foreign manufacturing imports and provided credits for domestic industries, controlling wages and prices, adjusting taxes, controlling exchange rates and investing in infrastructure, energy and even education and welfare provision.³² ECLA proposed to reform capitalism, promoting an interventionist government policy with Keynesian-style macroeconomic instruments.

The Cuban experiment with ISI, under the influence of ECLA advisors from 1959, was short-lived. In the process of unravelling the contradictions which had fettered Cuban development, the Revolution took a socialist path, creating entirely new social relations and institutions. With increased state ownership and redistribution of land, the introduction of planning, the declaration of socialism in 1961, the imposition of the US blockade, military aggression and political and economic isolation in Latin America, Cuba turned towards the Council for Mutual Economic Assistance (CMEA) for an increasing proportion of its trade. CMEA was founded in 1949 by the USSR and the socialist countries of eastern Europe. These countries employed the economic management system developed in the USSR – and known in Cuba as the Auto-Financing System (AFS)³³ – which, despite having predominantly state ownership and central planning, relied on certain capitalist mechanisms to promote development. It is a measure of the Cuban 'heresy' that, while rejecting the reformist capitalism

of ECLA, Cuba also resisted the easy formula of blanket copying from the existing socialist countries. In this, Guevara was instrumental.

Guevara's 'heresy' reflected his profound perception of socialism as a transitional stage – the period between capitalism and communism – in which the qualitative tasks of preparing human consciousness and social relations for communist society were as important as the quantitative tasks of developing the forces of production. 'We fight poverty but we also fight alienation', he said: 'Marx was concerned with both with economic facts and their reflection in the mind, which he called a "fact of consciousness." If communism neglects facts of consciousness, it can serve as a method of distribution but it will no longer express revolutionary moral values.'³⁴ Through the revolutionary process, Cubans would transform themselves and this would in turn impact upon the institutions and relations they established within the Revolution.

Those on the outside of this process of revolutionary self-transformation often struggle to comprehend the Cuban government's social project, precisely because they apply the yardsticks of capitalist economics, focusing on growth and productivity statistics to measure 'success' or 'failure', while paying little attention to philosophical or political priorities. Commentators who have been quick to condemn the 'mismanagement' of the post-1959 economy have barely considered the problems resulting from the structural underdevelopment of the island and often all but ignored the devastating impact of the US blockade which significantly reduced the choices open to the Cuban government.

Located outside of Cubanology, this book presents an immanent critique, accepting the basic assumptions articulated by Guevara and the post-1959 Cuban leaders and assessing developments and achievements on the basis of the aims and objectives set out by the Revolution itself. In words which have been attributed to Lenin: 'To be really "objective" we must first decide on which side we stand: with the oppressed or with the tenacious champions of the privileged minority.'³⁵ Accepting Guevara's premises and understanding his endeavour means acknowledging the limits of economic statistics in measuring achievement. Guevara implemented the BFS as Minister of Industries for just over four years during which Cuba was blockaded, attacked, invaded and embroiled in the threat of nuclear confrontation. Industry was nationalised, trading partners shifted, state planning was introduced and professionals left the island in their thousands. The system itself was new, original and evolving. What accounting values could be placed on so many variables to produce a quantitative economic evaluation? How can the impact of consciousness on productivity be assessed? How can success in diminishing alienation as well as poverty be measured?

To understand Guevara's role in economic management in Cuba it is also necessary to analyse his contribution to socialist political economy, and vice versa. In other words, to present his theory as a dialectical function of his actions. In doing so this book adopts many concepts which are generally assumed to be unique to Marxists but are not necessarily so.³⁶ It frames development through the panorama of class struggle and stages of development of the productive forces. It adopts vocabulary such as 'bourgeois', 'petit-bourgeois', 'working class', 'vanguard', 'counter-revolutionary', 'dialectics', 'dictatorship of the proletariat' and 'surplus value'. In addition it uses the vocabulary of the Cuban revolutionaries, with terms such as 'cadre' (leader), 'compañero' (colleague or 'comrade'), 'nucleus' (leadership group) and 'consciousness' (social conscience and commitment to the Revolution).³⁷

English historian Eric Hobsbawm said:

Marxism, the most practically influential (and practically rooted) school of theory in the history of the modern world, is both a method of interpreting and of changing it, and its history must be written accordingly ... It must also deal with the movements inspired, or claiming to be inspired by the ideas of Marx, and with the revolutions in which Marxists have played a part, and with the attempts to construct socialist societies by Marxists who have been in a position to make such attempts.³⁸

Between 1959 and 1965, Guevara was in a position to attempt to construct a socialist society as a member of Cuba's revolutionary government. In six tumultuous years he made an indelible contribution to the economics of revolution.

2

Revolutionary Consolidation and the Emergence of the BFS

A man with a necklace of bullets and a farmer's hat tilted on the back of his head stands with his legs apart gazing at the rifle he holds as a banner pole for a Cuban flag. Whoever holds the other end has been cut out of the photo. Another Cuban flag is propped up behind five men with creased uniforms and moustaches, squashed onto a sofa between two majestic lampshades. Next to them a soldier slumps over a hotel chair under a military cap and sunglasses. The two Cuban flags seem to demark the stage for a theatre performance by a rabble of young men, their faces vibrant with smiles or anxiety, their rifles flung about them like extra limbs. But this is no theatre. This is the Rebel Army planting itself over the shiny chessboard tiles of the luxurious Havana Hilton hotel in the first days of 1959.

The new year had swept in with unprecedented drama. The dictator Fulgencio Batista fled Cuba at dawn on 1 January. Habaneros responded to the news by taking to the streets and the clandestine revolutionaries emerged to seize control of key institutions in the capital. From Santiago de Cuba, in the east of the island, Fidel Castro called for a general strike and set out for Havana, driving from city to town, the streets made colourful by the joyful faces and waving arms of Cubans of every class, age and colour celebrating the end of the tyranny and cheering on the Rebel Army victors. Posh young ladies posed for photos with scruffy teenage soldiers, grasping their guns. They would soon be packing their bags. The Rebel Army and the insurrectionary groups in the cities had won the battle against Batista, but a war for control of Cuba was just beginning.

The story of that war can be narrated through the succession of new laws, resolutions and decrees issued by the revolutionary government which seized power in January 1959: 693 of them in 1959 (almost two a day), 229 in 1960 and 93 in 1961.¹ In the context of forging a new state, dismantling old institutions, creating a new apparatus with new social relations, new

alliances, new political priorities and new battles, the outcome was by no means certain.

Huge socioeconomic problems, resulting from the structure of the economy, confronted the new government once Batista's regime collapsed. The island was underdeveloped with pockets of technologically advanced foreign-owned industries. Havana glistened with consumerist modernity – Cadillacs, cabarets, casinos, brothels and booze. The seasonal demands of the sugar industry, which dominated the island, meant that underemployment and severe rural poverty were endemic. There was a lack of domestic industry, capital and investment. The economy was heavily reliant on imports and exports, mainly sugar-related, and trade was dominated by US interests. The most important and complex industries were technologically dependent on US suppliers and engineers.

In a first-hand account of his experience as advisor to Cuban planning bodies, US economist Edward Boorstein explained how US imperialism had locked Cuba into a structure of underdeveloped, mono-crop dependency:

The central fact about the Cuban economy before the Revolution was neither its one-crop concentration on sugar, nor the monopoly of most of the agricultural land by huge *latifundia* [plantations], nor the weakness of national industry, nor any other such specific characteristic. Until the Revolution, the central fact about the Cuban economy was its domination by American monopolies – by American imperialism. It was from imperialist domination that the specific characteristics flowed. Unless this is recognized, the Cuban revolution cannot be understood.²

The collapse of Batista's regime posed the question of what, if anything, the Revolution would do to tackle these economic and structural problems. Different forces and sectors within Cuba, not least within the new leadership and power structure, had different answers. The conflicts and contradictions which emerged in response to this challenge between 1959 and 1961 propelled the consolidation of the Revolution and the emergence of Guevara's Budgetary Finance System (BFS – Sistema de Financiamiento Presupuestario) of economic management.

A photograph in the popular Cuban magazine *Bohemia* from 11 January 1959 showed the new government's first cabinet meeting. Of the ten ministers sitting around a table so polished that it reflects their dark suits, only two wore the fatigues of the Rebel Army. The Revolution's first government was made up of moderate or liberal bourgeois elements of the opposition to Batista. This both pacified and confused US officials, foreign investors and the Cuban bourgeoisie. Meanwhile, military and popular power lay with the Rebel Army and the organisations which had participated in the revolutionary struggle: the 26 July Movement (Movimiento 26 Julio – M26J), the Revolutionary

Directorate (Directorio Revolucionario – DR) and the communists, known as the Popular Socialist Party (Partido Socialista Popular – PSP). This created an awkward coexistence between ‘business as usual’ capitalism and the radicalisation of the Revolution. Ultimately it was unsustainable.

In May 1959 the Agrarian Reform Law and other radical reforms made the US government and business interests uncomfortable, including those who had allied with Castro and the Moncada Programme which had advocated such reforms. Businesses froze investments and ran down inventories, either in ‘wait and see’ uncertainty, or to consciously create economic and political difficulties to undermine the new regime, which responded with nationalisations to prevent economic sabotage. Society polarised, many liberal representatives in the state apparatus disowned it, some joining force with growing US-based opposition. Meanwhile the Revolution consolidated to the left, passing ever more radical legislation.

A group from the UN’s Economic Commission for Latin America (ECLA) was invited to Cuba in 1959 to advise the new government, but it was withdrawn soon afterwards under US pressure. The experts were replaced with advisors and technicians from the socialist countries.³ The nationalisations brought most production in Cuba under state control and ECLA advisors, mostly advocates of the Import Substitution Industrialisation model, had reached the limits of their experience, which was in introducing capitalist reforms. They had no experience of socialist planning. Cuba became integrated with the economies of the socialist countries and, more gradually, the socialist political bloc. The US imposed a trade blockade, leading to severe shortages in Cuba, and pressured its western allies to follow suit and refuse financial credits, while Latin American countries broke off diplomatic relations.

In February 1961, the establishment of new institutions was announced: the Ministry of Industries (MININD), the Ministry of Foreign Trade and the Ministry of Internal Trade. These were set up to administer state production and introduce a planned economy. Other existing institutions were transformed: the Treasury Ministry, the National Bank, the Bank for Foreign Trade, and the Central Planning Board (Junta Central de Planificación – JUCEPLAN). Boorstein wrote that: ‘The official announcement that the Revolution was socialist did not come until mid-April [1961], at the time of the Bay of Pigs invasion. But already in February laws for a socialist reorganization of the government were coming out in the *Gaceta Oficial* [Official Gazette]. These laws were not drafted the night before their promulgation.’⁴ Rationing was introduced in March 1961. In April, Cuban émigrés trained and financed by US authorities invaded the island at the Bay of Pigs, being defeated and captured within days. It was the third and most substantial invasion of Cuba’s coast by exiles.

Within two years Cuba was transformed from a 'free enterprise' economy dominated by US investment and trade into a country in which the state controlled around 84 per cent of industry and trade had almost entirely shifted to the socialist countries. Ernesto 'Che' Guevara was instrumental in the policies, projects and reactions which propelled this transformation. By 3 January 1959, when he led his Rebel Army column into Havana at dawn, Guevara was among the most influential individuals in Cuba – although he did not join the government's Council of Ministers until late that year as President of the National Bank. Nonetheless, between his first glimpse of the decadent beauty of Havana and his nomination as Minister of Industries in February 1961, Guevara was decisive in the war for control of the new Cuba. Apart from his official titles, he held numerous responsibilities in the battle for the military, political and economic consolidation of the Revolution.

MILITARY CONSOLIDATION

Following his bitter experience in Guatemala, where democratically elected president Jacob Arbenz was overthrown by a CIA-sponsored military coup, Guevara was committed to purging Cuba's existing army in setting up a new state. From January 1959 at La Cabaña military fortress he presided over the trials and executions of Batista's army and police officers proven complicit in brutal repression. Supported by most Cubans and applauded with photographic reports in *Bohemia* magazine, the events created uproar outside Cuba and gave Guevara a reputation for 'red terror'.⁵ Guevara was simultaneously involved in setting up the new state security apparatus and the Liberation Department within the intelligence services to assist overseas guerrilla movements.⁶ The Rebel Army was consolidated as the armed body of the state and renamed as the Revolutionary Armed Forces (Fuerzas Armadas Revolucionarias – FAR). This, and the formation of an intelligence service to keep the leadership informed about machinations against the Revolution, meant that deliberations of the official government in Havana took the form of 'a tale told by an idiot, full of sound and fury, signifying nothing'. The balance of power and popular support lay with the left wing of the revolutionary movement.

By early 1960, defence teams were formed in preparation for US or exile force attacks. Guevara was responsible for Pinar del Río province in the west. Cuba entered a state of national defence mobilisation, with civilian militias organised throughout the island. Guevara encouraged the arming of civilians and participated in providing political education to accompany that military training. Additionally, from late January 1959, Guevara was involved with Cayo Largo, a hard labour camp for Rebel Army soldiers guilty of indiscipline or petty crimes.⁷ The strict discipline demanded from the soldiers was part of Guevara's

vision of guerrilla fighters as social reformers and, more generally, his concept about social responsibility and work as a social duty under socialism.

POLITICAL CONSOLIDATION

Guevara was determined that his troops in La Cabaña receive basic literacy skills and political and cultural education before returning to their towns and villages. He urged them to sign up to new tasks, emphasising the challenge ahead lay in securing the Revolution and consolidating a new state. In late January 1959, Guevara became head of the Department of Training of FAR and inaugurated the Military-Cultural Academy which gave classes in civics, history, geography, economics, Latin American politics and current affairs. He delivered political education to his own officers, giving them a basic history of socialism. He founded a newspaper called *La Cabaña Libre* and contributed to *Verde Olivo*, magazine of the FAR. In his work on the Cuban Rebel Army, Fred Judson explained that: 'On the theoretical and polemical plan, *Verde Olivo* relied mostly on Guevara and [Fidel] Castro to explain imperialism and Cuban economic dependence. Guevara's articles, especially, were explanations of imperialism from a Leninist perspective.'⁸ His articles recording episodes of the guerrilla struggle were compiled as *Reminiscences of a Revolutionary War*. The following year he published *Guerrilla Warfare*, a guidebook to the *foco* theory. In 1959 he set up Prensa Latina, a continental press agency to rival US corporate media domination, with Argentinian Jorge Ricardo Masetti and Uruguayan Carlos Maria Gutiérrez. They commissioned journalists from around the world.

In the first days of January 1959 Guevara organised meetings of student and youth groups involved in the struggle against Batista – the Socialist Youth (Juventud Socialista), the youth wing of the PSP, the DR, the Federation of University Students (Federación Estudiantil Universitaria – FEU) and his own M26J. On 28 January 1959 they launched the Association of Rebel Youth, setting up municipal, provincial and national committees in all workplaces. In 1962 this was renamed as the Union of Young Communists (Unión de Jóvenes Comunistas – UJC) and published a daily newspaper, *Juventud Rebelde* (Rebel Youth). Guevara also contributed to university reforms, urging students to relinquish the university's historical autonomy in favour of integration into the revolutionary government, opening their doors to the children of workers, peasants and non-white Cubans, and providing courses in specialities which served economic development plans.⁹

Guevara's talks with the PSP and the DR about power sharing lay the groundwork for their unification as the Integrated Revolutionary Organisations (Organizaciones Revolucionarias Integradas – ORI). Emerging out of a decade

of McCarthyist anti-communism, the talks were secret – the incorporation of communists in the new government sealed the split from the revolutionary process by liberal members of the M26J. In 1962, ORI was superseded by the United Party of the Socialist Revolution (Partido Unido de la Revolución Socialista – PURS), with Guevara among its six-member Secretariat and 25-member National Directorate. He was instrumental in strengthening relations with the communists, and through them with the Soviet Union. ‘Che had a Marxist formation and he considered the members of the PSP to be most trustworthy’, confirmed Orlando Borrego Díaz, deputy to Guevara from 1959 to 1964. Borrego came from a politicised peasant family, supporters of the Orthodox Party (Partido Ortodoxo) and although he joined the M26J, first as part of a secondary school rebellion against Batista and then as a guerrilla in Guevara’s column, he had no sympathy for communism at that time. ‘When it was necessary to name an administrator of a nationalised factory, Che would try to find one from among the militants of the Communist Party, because he believed they were more reliable.’¹⁰ Guevara’s attitude changed as he witnessed the sectarian machinations of leading PSP member Anibal Escalante, ORI’s secretary, which led to ORI’s replacement by PURS, and as his critique of the Soviet bloc developed.

ECONOMIC TRANSFORMATION

Guevara’s concern for production began in the Sierra Maestra where he set up artisan workshops and other projects to sustain the Rebel Army: a bakery, cobblers, farms, a newspaper, a radio station and ‘home-made’ bomb factories. Self-sufficiency meant it was unnecessary to live off the locals. Land reform carried out in Rebel Army-controlled ‘free territory’ redistributed land and won support from the rural poor. In October 1958, on arrival with his troops in the mountains in central Cuba, Guevara asked the PSP to send him books about the Cuban economy – he was thinking forward to the challenge of economic transformation even before the collapse of Batista’s regime.¹¹ In La Cabaña, Guevara again set up small-scale and artisan industry to employ the troops.

On 5 January 1959, Guevara met with Alfredo Menéndez, Juan Borroto, Omelio Sánchez and Francisco Yero, clandestine members of the M26J who worked officially in the Cuban Institute for the Stabilisation of Sugar (ICEA), a non-governmental organisation (NGO) representing landowners and the big sugar industrialists. At his request, they explained the structure of the sugar industry. Guevara was particularly interested in the *diferencial*, a conquest won in the late 1940s by Jesús Menéndez, communist and militant leader of the sugar workers, to secure them a share in the industry’s profits. Understanding the sugar industry was crucial to resolving the problem of unemployment, and

Guevara knew that without creating jobs the Revolution would not be able to stay in power for long. After this meeting, the group from ICEA began an extensive collaboration with Guevara who had moved to Tarara, a beach east of Havana, to recover his health. In summer 1959, almost two years before Castro's declaration of socialism, Guevara told the group from ICEA that the Revolution was constructing socialism in Cuba.¹²

Land reform was central to the revolutionaries' conceptions about political and economic independence and social justice. Without land reform there would be no industrialisation. Throughout March and April 1959, Guevara was involved in secret talks with the PSP and the DR to prepare the Agrarian Reform Law which was promulgated on 17 May and enacted on 8 June that year. The law was moderate, confiscating unproductive plantations of over 1,000 acres, affecting just 12,500 properties, or 10 per cent of Cuban farms that size. It echoed Article 1 of the 1940 Constitution introduced under Batista. Right-wing newspaper *Diario de la Marina* applauded the very 'responsible' agrarian reform. Guevara described it as a first timid law, which did not dare take on so basic a task as suppressing the plantation owners.¹³ Nonetheless, as historian of Cuba, Antoni Kapcia, explained: 'The law's radicalism lay in the fact of state intervention and the steady shift towards cooperativization and then collectivisation, all directly affecting American-owned property.'¹⁴ The 'timid law' confirmed progress towards the revolutionary laws originally outlined in Castro's Moncada Programme of 1953. Boorstein wrote:

Cuba needed land reform. But a true land reform is not a technical measure that can be accomplished to the satisfaction of everybody. A true land reform means taking the land away from the large estates and making it available to the people. A true land reform hurts; it changes the balance of political power; it begins a process of broader change. A true land reform is not a *reform*; it is a *revolutionary* measure.¹⁵

Nationalised land was to be distributed among landless rural workers or turned into cooperative farms to be administered by a new ministry-type organisation established by the Agrarian Reform Law called the National Institute of Agrarian Reform (Instituto Nacional de Reforma Agraria – INRA). With Castro in charge and the Revolution rooted in rural support, INRA became the key institution driving the radicalisation of the regime and the principal power base for left-wing leaders. Boorstein described the scene:

You could see and feel in the halls and offices of the INRA headquarters in Havana that it was a revolutionary organization. Here were not the prim, old-line functionaries of the National Bank or Treasury, but bearded rebels in uniform, carrying arms. The working hours were not the 9-to-5 of the ordinary government worker. They

were the irregular hours – the nocturnal hours – of the guerrilla fighter. Meetings could start at midnight and last till daybreak. INRA was characterised by suspicion of and contempt for bureaucracy and paperwork.¹⁶

The group from ICEA worked out the details, the structure and functions of this huge institution, INRA, before being incorporated into the Department of Industrialisation to lead key areas of industry. At Guevara's request Alfredo Menéndez produced a report on the feasibility of selling sugar to countries outside the west and the socialist bloc and then accompanied him on the new government's first overseas trip – 'a goodwill mission' to eleven countries: Egypt, Syria, India, Burma, Japan, Indonesia, Ceylon, Pakistan, Yugoslavia, Sudan and Morocco.

Despite neither being Cuban, nor holding an economic or government post, Guevara set out on the 12 June 1959 as head of the three-month mission. By initiating new and extending existing commercial and political relations with these non-aligned countries, he gained international legitimacy for the new government, secured support for the Revolution and decreased Cuba's trade dependency on the US in anticipation of future confrontation. The experience was pivotal for Guevara who observed numerous industries which he later attempted to foster under MININD: iron and steel, ship-building, textiles, hydro-electrics, generators, turbines, machinery construction, paper mills, and so on. Omar Fernández, a medical student and revolutionary who travelled as his deputy, recalls how Guevara insisted that Cuba could introduce many of the industries they saw – for example, a motor factory in India and an iron and steel plant in Egypt. He was also interested in agrarian reform laws in Yugoslavia, Japan and the United Arab Republic (Egypt and Syria) and expressed a desire to emulate the research and science institutes of some countries, particularly the physics, medical, statistics, chemical and agricultural institutes in Egypt and India.¹⁷ Guevara set out to develop similar projects from 1961 as Minister of Industries.

Most significant was their visit was to Yugoslavia, a socialist country which had split with the Soviet bloc and was a founding member of the Non-Aligned Movement. This was Guevara's first experience of a country using the Soviet-style economic management system known in Cuba as Economic Calculus or the Auto-Financing System (AFS). The Cuban delegation witnessed workers' management of factories and voluntary labour, as well as the country's industrial advances. Government representatives explained how the economy was managed in Yugoslavia, how workers' salaries were determined, how they participated in administration, their social programmes and their concept about the type of socialism they were constructing. Fernández recalled: 'The

Yugoslavs said that their social problems were identical to those in the USSR but that their socialism was different from that of the Russians.¹⁸

Arguably, observing a 'socialist' country which had broken away from Soviet orthodoxy and which enjoyed significant industrial development contributed towards Guevara's confidence in critically analysing the Soviet economic management system and resisting blanket copying for Cuba. However, he never regarded Yugoslavia as an alternative model for Cuba. Indeed, Guevara's assessment of Yugoslavia appears contradictory. This reflects both the tension between public voice and private view – before the Revolution was declared to be socialist – and the immaturity of his ideas on socialist political economy at that stage. Fernández said: 'Che drew our attention to the fact that Yugoslavia, a socialist country, had acquired great development ... but he did not speak about Cuba being socialist.'¹⁹ Back in Cuba, Guevara applauded the Yugoslavs' level of development and freedom of discussion, saying:

We had many discussions there about diverse problems, about the organisation of work in Yugoslavia, based on what they call 'self-management', a system which gives the workers great responsibility in all the factories. The workers own their work unit and the state controls the salaries and has systems which decide whether they stay open. The system is a little complicated and difficult to understand, but very interesting.²⁰

A week later he described Yugoslavia as having a 'Marxist economy' which had advanced without help from the Soviet bloc.²¹ However, in a third report, Guevara described Yugoslavia as 'managerial capitalism with a socialist distribution of the profits', and pointed to the potential for competition among enterprises to distort the socialist spirit.²²

It is indicative of Guevara's ability for penetrative and critical analysis that, as Cuban economist Carlos Tablada points out: 'in his first contact with an economy governed by the so-called self-management system [AFS], without direct knowledge of the other socialist countries or of specialized economic literature, and without yet having a post in government that compelled him to look into these questions – Che was already concerned about the self-management system'.²³ This concern for political economy was the first step towards his later contributions to the Great Debate of 1963–65 and his critique of the Soviet *Manual of Political Economy* in 1965–66.

Full diplomatic relations were established or consolidated between Cuba and the eleven countries visited and preliminary trade agreements were made. In Egypt they held secret negotiations with Soviet representatives, Menéndez returning halfway through the trip to update Fidel on discussions with the USSR.²⁴ On 7 October 1959, three weeks after the delegation's return, Guevara

was named head of the new Department of Industrialisation set up within INRA. Fernández was not surprised: 'After the trip, Che had become a true industrialist, a defender of industry and Fidel rewarded him. He spoke a lot about what the country could produce with an industrial base.'²⁵

In August 1960 Guevara opposed recommendations by the French agronomist René Dumont who urged the Cuban government to adopt market-orientated measures based on material incentives, the restoration of profit and a market pricing system as the main regulators of production and consumer goods allocation.²⁶ Guevara's dissent was another indication of his deepening opposition to 'market socialism' – still six months before the socialist character of the Revolution was declared in April 1961. Dumont was invited to Cuba several times in the 1960s by Castro and PSP leader Carlos Rafael Rodríguez, then President of INRA, to engage in discussions about his criticisms of the Revolution's achievements and the newly established People's Farms. Guevara, however, regarded him as an enemy of the Revolution and socialism.²⁷

As the new state apparatus was mounted, Guevara moved into influential positions where his views helped to shape the developing landscape of the Revolution. He became one of three members on the Economic Commission of the National Directorate of ORI (later PURS), the highest-level organisation determining the Revolution's development strategy, and represented the Commission on JUCEPLAN which detailed and delivered the strategy. In addition, he became President of the National Bank.

THE NATIONAL BANK OF CUBA

Cuban president Osvaldo Dorticós' quip about how Guevara volunteered to preside over the National Bank of Cuba (NBC) is better known than any details of his work in that position. The story goes that in a frantic late-night meeting of the Council of Ministers in the midst of spiralling retaliations between Cuba and the United States and the defection of the bourgeois liberals from Cuba, Castro asked for 'a good economist' to take over presidency of the NBC. Half asleep, Guevara raised his hand, Castro replied with surprise: 'Che, I didn't know you were a good economist', to which Guevara exclaimed: 'Oh, I thought you asked for a good communist!' The story has become part of the legend of the man and is a metaphor for the audacity of the young revolutionaries in appropriating the apparatus of the state. Indeed, Guevara was wide awake to the fact that changing property relations and the break with the US government demanded profound adjustments in the role and character of financial institutions, particularly as Cuba was preparing to implement socialist planning. The NBC was integral to the problems of industrialisation, trade and the sugar industry. Given his contribution to agrarian reform and having

been placed at the head of industrialisation, it is not so surprising that Guevara presided over a revolutionary adjustment in the role of the banking system.

Guevara began as President of the NBC on 26 November 1959, seven weeks after becoming head of the Department of Industrialisation in INRA. This led him onto the Council of Ministers. His rapid ascendancy to two first level roles in government reflects the radicalisation of the Revolution. He was active as president for less than a year before leaving for a trade mission to the socialist countries in October 1960. Surrounding himself with bank professionals, Guevara introduced import–export licences, withdrew the country’s gold supplies from the US, withdrew Cuba from international financial institutions dominated by the US, oversaw the establishment of a planning institution to direct trade with the Soviet bloc and managed the nationalisation of the banking system in Cuba. One of his most important projects, the change of banknotes, took place in August 1961 almost a year after he left the bank and it was to be another three years until he wrote a theoretical article about the role of the bank under socialism.

Set up in 1948, as one of the last central banks in the Americas, the NBC was relatively impotent in influencing the behaviour of private banks and investors in Cuba.²⁸ The US government’s *Investment in Cuba* report of July 1956 revealed that Cuban capital was averse to domestic investments, reluctant to buy Cuban government peso securities and invest in the stocks of domestic agricultural and industrial enterprises. The Cuban bourgeoisie’s preference for liquidity, it said, ‘has been nurtured by the very nature of the Cuban economy, which places a premium on the maintenance of liquid resources to meet the sudden and drastic swings inherent in a one-crop [sugar] economy’. Meanwhile, it estimated that ‘Cuban long-term investments in the United States amounted to at least \$150 million at the end of 1955.’²⁹ This made capital flight from Cuba easy and inevitable following the Revolution.

Before Batista’s coup on 10 March 1952, Cuba’s net or free monetary reserves were around \$534 million. Exorbitant spending, credit expansion and theft during Batista’s regime reduced this by \$424 million, or 79.4 per cent, to less than \$111 million.³⁰ Some 70 per cent of gross reserves were tied up in loan guarantees which meant that the Bank’s net reserves did not reach the legally required minimum of 25 per cent of its international liabilities in cash, gold or dollars; nor did they cover 75 per cent of the gross gold or dollar reserves.³¹ Additionally, as Batista and his associates fled Cuba, they stole millions from the NBC and the Treasury. ‘When we took power, Batista had taken everything, all the money; the country’s reserves. It was a country decapitalised; the national funds had been stolen!’ explained Jorge Ruiz Ferrer, a leader in the M26J urban underground whose architecture degree had been interrupted in the final year by Batista’s coup.³² The new government had only

national savings and tax revenues to draw on for investments, severely limiting the capacity for public spending and private investments. Wealthy Cubans were leaving the island, taking their deposits and taxes with them. How was the new government going to carry out the ambitious socioeconomic reforms outlined in the Moncada Programme without financial resources?

Before Batista's coup in March 1952, public debt had been 177 million pesos. But it had ballooned to 1.24 billion pesos by 31 December 1958 – 788 million held directly by the state and 450 million in issues by public institutions guaranteed by the state, although largely for private investment. The huge expansion of credit in this period partly reflects the corruption of the dictatorship, which siphoned off state funds to private institutions set up by its collaborators. Foreign control of industry and commerce and the stagnation of the sugar sector meant that public office became the means to enrichment and social mobility for Cubans. US investors controlled 90 per cent of telephone and electric services, 50 per cent of public railways and 40 per cent of Cuban sugar production,³³ leaving 'government' and the civil service as the best way for Cubans to get rich and be influential. Cuba's economic domination by foreign capital created a political apparatus in which corruption and graft were structurally inherent.

By 1959, Juan Raimundo Jiménez Velo had six years' experience in the NBC, carrying out 'sensitive' work as the head of Inspections. In the first days of January 1959, he was sent to the Bank of Economic and Social Development (BANDES) to maintain control in the wake of the Rebel Army takeover. Set up by Batista in 1955, with the state as sole shareholder, Jiménez claimed that 'the main objective of the [BANDES] Bank – and this was the "development" part – was to favour members of the dictatorship, helping to make them rich. Public credit was used to finance anonymous enterprises.'³⁴ He explained that the Department of Work Concessions financed investments in infrastructure, generating incomes for the initial payment and interest on the bonds which were issued to obtain capital; for example, on toll roads, maritime terminals, and so on.³⁵ Ironically, the flurry of public works undertaken during the 1950s was inherited by the Revolution and became an intrinsic part of its iconography. These include the square and the statue of José Martí (turned into Revolution Square post-1959), Havana Town Hall (now the Central Committee of the Cuban Communist Party), and the National Bank (now the Hermanos Ameijeiras hospital).

Felipe Pérez Pazos had first become President of the NBC under Carlos Prio's government in 1950, returning to Cuba from his work at the International Monetary Fund (IMF). After Batista's coup, his son Javiar became a leading member of the M26J's urban underground and convinced him visit to Fidel Castro in the Sierra Maestra. In July 1957, Pazos senior signed the *Manifiesto*

to the Cuban People, calling for a new civic-revolutionary government.³⁶ He was subsequently returned to the NBC presidency in January 1959 by the Revolution. Immediate measures were taken to stop ex-functionaries and collaborators of the Batista regime from withdrawing funds and then sending that money back to Cuba to cause inflation or finance counter-revolutionaries.³⁷ To avoid devaluation of the peso, Pazos implemented a system to control international charges and payments, restricting the sale of hard currency for leisure trips, for remittances and the transfer of capital abroad.

In April 1959, all 1,000 peso and 500 peso banknotes in Cuba were withdrawn from circulation. In September 1959, another law criminalised currency speculation – again to stop *Batistiano* officials extracting money from the country. Despite these controls, which aimed to avoid capital flight, ‘the directors of the National Bank did not apply them with the necessary severity in the first ten months of 1959’, according to Raúl Cepero Bonillo, the Revolution’s first Minister of Trade.³⁸ As a consequence, on 26 November 1959, Guevara was named as President of the NBC. In addition, Pazos’ dismissal was linked to his defence of Hubo Matos, an M26J commander who had revolted against the alliance with communists. Pazos was transferred to serve as ambassador to the European Economic Commission, but he soon resigned and, along with Justo Carrillo, Vice President of the NBC and director of the Agricultural and Industrial Development Bank (BANFAI), went into an hostile exile.³⁹ Many of Pazos’ assistants left the bank with him, signalling the end of the liberal bourgeoisie as a political force within the revolutionary government.⁴⁰

News of Guevara’s appointment was met by financial panic and a run on the banks, despite his reassurances that he would follow Pazos’ policies.⁴¹ Fidel mocked this reaction by those who, he said, had slandered Guevara, distorted his ideas, turned him into a phantom and then had a fright when he was designated president of the NBC, ‘shocked by the phantom they had created’. But, he insisted, ‘Che is not there to carry out any barbarity. Che is there for the same reason that we sent him to Las Villas [during the revolutionary war] to stop the enemy troops passing towards Oriente, he is in the National Bank to stop hard currency leaving, and ensure that the store of hard currency that we have is invested correctly.’⁴²

Guevara’s principal qualification to be President of the NBC was his commitment to national independence and to the increasingly socialist character of the revolutionary process – the rest was a case of learning on the job. His nomination reveals the severity of the crisis and the speed of transition, where the impulse to radicalise the regime outstripped its technical capacity to facilitate that transformation. He was no more an economist than he had been

a soldier or industrialist, although shortly after taking the job he wrote to his parents, perhaps ironically, of his ‘apparently God-given gift for finance’.⁴³

Despite moving to the NBC offices, Guevara continued to direct the Department of Industrialisation through nightly discussion with his young deputy, Lieutenant Orlando Borrego Díaz. Months before starting at the bank, he arranged weekly classes with a mathematics professor at Havana University, Salvador Vilaseca, who had been active against the dictator Machado in the 1920s and had accompanied Guevara on the ‘goodwill’ mission. Vilaseca admits that during the trip when the Argentinian asked him for classes:

I thought that perhaps it was out of courtesy because Che knew that I was a maths professor. With what was awaiting this man in Cuba he wouldn’t have time to study mathematics. A fortnight after returning to Cuba he sent a message to say that he had the board, and the eraser, and asked when we were starting? I began to give him classes at the end of September 1959.

On being nominated President of the NBC, Guevara invited Vilaseca to work as the bank administrator: ‘The administrator was the second in the bank and I was scared ... I had never been in a bank and I didn’t possess an account. I said: “I don’t know anything about banks.” Che replied “Me neither and I am the president, but when the Revolution assigns you to a post the only thing to do is to accept, get studying and work to perform as you should.”’⁴⁴ Working as President of the NBC, studying algebra, trigonometry, analytic geometry, differential equations and differential and integral calculus ‘on the job’, whilst managing industry, provided experience of financial administration and economic analysis which was later embedded into the BFS of economic management.

In addition to Vilaseca, Guevara was accompanied at the bank by José Manresa, a former desk sergeant under Batista in La Cabaña who agreed to be his secretary. Guevara worked with the remaining NBC staff, those who hadn’t joined the exodus of managers and professionals overseas. The banking trade union had been among the most radical in the struggle against Batista, but it had represented the clerks and administrators, not economists and directors. It was different at the management level, as Jiménez testified: ‘There was an enormous emigration. I had colleagues that invited me to go to Venezuela where I would be paid double. Most of the management personnel left. In Bank Inspections, for example, of 40 people, four or five remained.’⁴⁵

A rare photo of Guevara in the NBC shows him comfortably poised in his green fatigues, apparently listening intently to one of four men sitting close to him and smiling in their suits and ties. He learnt economics from the experts he supervised, outlining the objectives and drawing his own conclusions. The

bank functionaries accepted him because as bureaucrats they appreciated that Guevara was methodical and organised. After calling the bank staff together one day to explain the concept behind voluntary labour, Guevara organised manual work every Sunday. Vilaseca noted Guevara's ability to induce ideological commitment and political action from his colleagues: 'The staff had good technical formation but they were not really revolutionaries and he gave them that formation.'⁴⁶ Two months into his presidency, Guevara apologised, perhaps tongue-in-cheek, to his audience at the NBC: 'because my talk has been much more fiery than you would expect for the post I occupy; I ask once more for forgiveness, but I am still much more of a *guerrilla* than president of the National Bank'.⁴⁷ As if to prove it, he signed banknotes with his Cuban *nom de guerre*, *Che*. According to John Gerassi, who edited a compilation of Guevara's speeches and writings:

The first question he asked of his subordinates when he took over the bank was 'Where has Cuba deposited its gold reserves and dollars?' When he was told, 'In Fort Knox,' he immediately decided to sell, converting the gold reserves into currencies which were exported to Canadian or Swiss banks. Thanks to this foresightedness, Cuba was not caught in a bind – indeed, it would have been bankrupt – when the United States seized all Cuba's assets in the United States.⁴⁸

The day following Guevara's appointment as president, a system of import licences was established and the importation of many luxury goods prohibited. An International Department became responsible for granting compulsory licences to import or export. He decisively cut Cuba's financial links with the US and the international capitalist institutions they dominated, withdrawing the country from the IMF, the World Bank and the Inter-American Development Bank. He terminated a contract signed by Pazos for a US firm to report on BANDES' potential – paying their fees before sending them packing because, according to Jiménez, 'he did not consider it reliable to base any development policies on the criteria which came from them, more so when there were revolutionary Cuban professionals who were capable of carrying out these kind of tasks'.⁴⁹

Two months later in April 1960, in anticipation of economic warfare from the US, a new Bank of Foreign Commerce (BANCEC) was set up, overseen by a commission chaired by Guevara. BANCEC really served as a government foreign-trade agency. In July it was instructed to import as many goods as quickly as possible from the US to reduce the impact of the blockade which the US government was expected to impose at any moment on exports to Cuba.⁵⁰ As an advisor to BANCEC, Boorstein assisted in devising the list of imports. He wrote:

The successful takeover and operation of the Cuban economy depended greatly on how well its foreign trade was managed under the rapidly changing conditions produced by the elimination of the US sugar quota, nationalization, the American embargo, and the need to reorient about 80 percent of Cuba's trade to the socialist countries ... Quickly a rudimentary organization was set up – Import and Export Divisions and a Financial Division to prepare the information required by the National Bank.⁵¹

By October 1960 a partial blockade was imposed by the US. This created an obstacle which could only be overcome by introducing a state monopoly of trade. Financial resources and hard currency would also need to come under state control. The nationalisation of the bank became inevitable as the Revolution proceeded to radicalise. Cuban bank historian Julio Cesar Mascaros wrote that 'Of all the tasks the NBC had faced since its foundation none had such political connotations, or was as complicated and far-reaching as the nationalization of the bank.'⁵² The immediate trigger was the US government's cutting of Cuba's sugar quota – the quantity of sugar which they agreed to purchase from the island on an annual basis. Cuba's trade had never really operated in a 'free market'. This was authorised by the US Congress on 3 July.

Two days later, Cuba's Council of Ministers announced US industrial, banking and commercial operations in Cuba would be expropriated, with compensation for owners in the form of long-term government bonds in pesos.⁵³ Within 14 hours, US President Eisenhower introduced 'economic sanctions against Cuba' by cancelling the remaining 700,000 tons of sugar imports in the 1960 quota. The Soviet Union took its cue on 20 July, offering to buy the sugar dropped by the US. Cubans seized the three largest US sugar mills on the island. Tensions increased with daily acts of retaliation between the US and Cuban governments. On 17 September, three US banks and their branches and dependencies in Cuba were seized – the First National City Bank of New York, the First National Bank of Boston and the Chase Manhattan Bank – with total assets of 249 million pesos, 149 million in loans, 207 million in deposits and capital or reserves of 12.5 million. The nationalisation resolution stated: 'It is not possible that a considerable part of the National Bank should remain in the hands of imperialist interests that have led to the reduction of our sugar quota in a cowardly act of criminal economic aggression'⁵⁴ – thus articulating the link between the role of the bank, the sugar industry and the struggle for national independence.⁵⁵

On 13 October, a new law declared that in the context of the revolutionary process banking must be a public function. Creating money, giving credit, holding deposits and savings, providing mortgages and fostering development

were to be the exclusive responsibilities of the state, administered according to the economic plan, not entrusted to private enterprises which prioritised individual profit over collective interest.⁵⁶ The remaining three foreign banks, five public credit institutions and 44 domestic commercial banks were nationalised.⁵⁷ Just six out of the 55 banks in Cuba (11 per cent) had been foreign, but they had held 32 per cent of capital and reserves and 32.5 per cent of cash, had 35 per cent of total client deposits, 38 per cent of loans and investments, 41 per cent of bank loans and 31 per cent of investments in state bonds and other public and private values, demonstrating the foreign banks' domination of Cuban financial institutions.⁵⁸

Less than two years into the Revolution, eleven months into his bank presidency, one week before setting off for his first visit to the USSR and still six months prior to the declaration of socialism, Guevara presided over the nationalisations which left Cuba with one state monopoly bank, closer to Lenin's model of the socialist state bank than even the Soviet Union which still had several banks. For Guevara this decisive action would 'effectively guarantee that the Agrarian Reform and the great aspirations to industrialise the country won't suffer from any kind of sabotage or obstacles from within the country'.⁵⁹ The NBC, he said, would be restructured along three lines: agricultural credit, industrial or commercial credit, and a monopoly on imports and foreign trade. Guevara was driving through the structural changes necessary for the introduction of a socialist planned economy.

The nationalisations of September and October 1960 transferred 83.6 per cent of industry, all sugar mills, 42.5 per cent of land, most trade, the banks and the communications networks into state hands. As Guevara was named Minister of Industries in February 1961, another decree invested in the NBC all the functions of a central bank, an investment bank, an international operations bank and a people's saving bank. Banking offices were set up throughout the country to give the population access and encourage savings. The law provided for the gradual and progressive introduction of the planning of credit and monetary circulation. Boorstein commented that 'The new National Bank with its centralization of monetary resources, its power of direct decision over credit, and its integration into a broader planning mechanism would give Cuba a powerful instrument of monetary planning and control.'⁶⁰ Later, during the Great Debate of 1963–65, Guevara came to question the concept of a socialist bank asserting financial control over production. This reflected both his experience of economic management in the industrial sector and his penetrating study of Marx's *Capital*.

The radicalisation of the Revolution was answered by the defection of political moderates, US economic aggression, sabotage, terrorism and invasion by an exile community supported by the US authorities. Even the money supply

became a front in the war for control of Cuba. Between December 1958 and August 1961, Cuba's money supply had tripled according to the quantity of notes issued by the NBC. But prices had risen by only 6 per cent, because up to 40 per cent of the banknotes were being hoarded. In December 1958, monetary circulation had been 451.2 million pesos. More than that sum, 462.1 million pesos, was not presented for exchange when new banknotes were introduced in August 1961, although officially the money circulation should have been 1,187 million pesos.⁶¹

The change of banknotes was necessary to regain control of the money supply, stop capital flight and remove the source of funding for the counter-revolution. Bank historian Mascaro compared this operation in the economic-financial sphere to the Cuban political-military victory at the Bay of Pigs.⁶² In fact, in the run-up to that invasion, the US government had used thousands of Cuban workers in the US Naval Base in occupied Guantanamo as a vehicle to create inflationary pressures. The workers, who were paid in US dollars, were encouraged to exchange each dollar for a five-peso banknote when the official exchange rate was one to one. Some 350,000 pesos a month entered Cuban territory via these means alone until frontier controls were set up.⁶³

In autumn 1960, Guevara was representing Cuba on the first official trade delegation to the socialist countries. From Czechoslovakia, he sent instructions to Vilaseca to organise the printing and concealment of new banknotes on the island. He was still officially President of the NBC. It was a secret operation known about only by Guevara, Fidel Castro, Vilaseca and Dorticós. In February 1961, Guevara was replaced as NBC president by Cepero Bonilla, who was only informed about the operation when the new banknotes were ready.⁶⁴ Guevara's involvement 'was a secret here for many years', said Vilaseca.⁶⁵ Jiménez confirmed that 'Che ordered Vilaseca to make the money and guard it in military zones. The people thought it was armaments.'⁶⁶ Guevara was probably advised to change the banknotes by his counterparts in the socialist countries he visited. It was clearly vital both to remove the money funding the counter-revolution and that preparations be carried out in absolute secrecy.

Cubans had the weekend of 4–8 August 1961 to hand in their cash to be replaced with new banknotes. Around 3,500 exchange centres were set up throughout the island, with ten people operating in each, having received instructions just hours before the change began. Another 10,000 bank employees dealt with the technical aspects of the change and thousands of militia and FAR soldiers guarded the exchange centres, the banks and the trucks: 'We calculate conservatively that more than 60,000 people were mobilized', recorded Cepero Bonilla.⁶⁷ This operation was organised 'with such perfect discretion and efficiency, that our enemies, from the sophisticated Central Intelligence Agency to the last *gusano* [worm – a Cuban term for political

exiles] found out about the change through the press and, as intended, were unable to take any protective measures', according to Mascaros.⁶⁸

Rosario Cueto, Borrego's personal assistant in the Department of Industrialisation, was also summoned to join the operation working on the withdrawal and organisation of the new money: 'We did not leave there for 72 hours', she said, explaining how preparations were kept secret: 'For example, Che got Herman López to do the drawings for the banknotes, but he didn't know what they were for.' These drawings still adorn Cuban peso notes today. She recalled:

I had a list of people to call and things to guard. You didn't know what they were, but you had to do it. Everything was very confidential, very compartmentalised. It gave us a level of discretion that was incredible considering how young we were. There are things which I still haven't told my family. I said I didn't want anyone to tell me anything which I didn't need to know.⁶⁹

The wording of the new law said it aimed 'to end the insecurity and risks which result from the fact that the banknotes currently in circulation are printed by foreign enterprises outside the effective control of the revolutionary government ... [and] to prevent national monetary resources in the possession of the external counter-revolution from being used to conspire against the revolutionary government and the people of Cuba'.⁷⁰

Up to 200 pesos for each nuclear family was changed immediately. Sums surplus to that were deposited in bank accounts to be changed and withdrawn afterwards. Special Accounts were set up for institutions, enterprises, trade unions, political and social organisations and legal personnel, and there were special facilities for diplomats, tourists and foreign non-residents. All flights were stopped so no one could arrive or leave the island during the weekend, preventing hoarders returning from abroad to change their banknotes. On the Monday, a new law limited private bank deposits. Up to 1,000 pesos in deposits would be changed quickly; more than that was placed in Special Accounts receiving 3 per cent interest. Up to 10,000 pesos could be withdrawn in 100-peso monthly instalments. Amounts in excess of 10,000 pesos remained without changeable value. In other words, this wealth, a total of 72.5 million pesos, was expropriated.⁷¹ It was used, along with the money printed to exchange for banknotes which were not handed in, towards amortising the long-term debt of the National Bank which was reduced by 497 million pesos.⁷² Monetary circulation fell by over 700 million pesos to around the December 1958 level. Changing the banknotes successfully prevented capital flight, demonetised the counter-revolution's funds and paid off part of the Bank's debt. In addition, Cepero Bonilla announced that money issues would be controlled by the NBC

under a four-year plan from 1962, concluding that ‘The change in banknotes has facilitated the start of total planning in the economy.’⁷³

Guevara had not yet developed his theoretical analysis about the role of the bank under socialism, however, his experience as President of the NBC contributed to the development of the BFS which was beginning to take shape in the Department of Industrialisation. The BFS began as an organisational apparatus to cope with concrete problems created by the nationalisation of industry. As banker, Guevara set up the appropriate bank account to facilitate this system of economic management.

THE DEPARTMENT OF INDUSTRIALISATION

There was nothing controversial about asserting Cuba’s need to diversify agricultural production, foster a manufacturing industry and industrialise to reduce dependency on foreign trade. In his court defence *History Will Absolve Me* in 1953, Fidel Castro had highlighted the problem:

With the exception of a few food products, lumber and textile industries, Cuba continues to be a producer of raw materials. Sugar is exported to import sweets, hides are exported to import shoes, iron is exported to import ploughs ... Everyone agrees that the need to industrialise the country is urgent, that there is a lack of metallurgy industries; paper industries; chemical industries; that there is a need for breeding, crop cultivation, technological improvement and processing of our food industries so that they can resist the ruinous competition from European industries of cheese products, condensed milk, liquors and oils, and the North American canned goods; that we need merchant ships; that tourism could be an enormous source of revenue, but the owners of capital demand that the workers remain under the Claudian yoke; the state folds its arms and industrialisation can wait for the Greek calendar.⁷⁴

But Castro’s assessment was hardly more radical than the conclusion reached by the World Bank two years earlier that there was a need:

1. To make Cuba less dependent on sugar by promoting additional activities ...; 2. To expand existing – and to create new – industries producing sugar by-products and using sugar as a raw material ...; 3. Vigorously to promote non-sugar exports ... the promotion of mineral exports and of the export of a variety of crude and processed foodstuffs; 4. To make further progress in producing in Cuba, for domestic consumption, a wide range of foodstuffs, raw materials and consumer goods now imported.⁷⁵

Analysts had interpreted Cuba’s economic stagnation in various ways; the point, however, was to change it. It was Guevara who took on the challenge.

Appointed as head of the Department of Industrialisation on 7 October 1959, he devoted his energies to fostering industrial development in Cuba but within the additional framework of building socialism. Invited by Guevara to work as his deputy in industry, Borrego admitted that they had no idea what needed to be done: 'we just knew we had to develop industry'.⁷⁶ The Department offices were set up in a 14-storey building under construction by the Batista regime and taken over by INRA. Arriving at the office on their first day, Guevara is reported to have said to Borrego: 'Well, the first thing we have to do is finish the construction ... Then I want you to take over the administration of the Department.'⁷⁷ Guevara's secretary Manresa also joined him, while Aleida March, leading member of the M26J in central Cuba and Guevara's wife, continued as his personal assistant. Gradually, other trusted revolutionaries were added to the Department staff: Francisco 'Pancho' García Vals, a PSP official; Calixto Morales from the Rebel Army; the architect Jorge Ruiz and the team from ICEA who had worked on the Agrarian Reform law; Alfredo Menéndez, Juan Borroto, Omelio Sánchez.⁷⁸

Borrego recorded the peculiarity of the situation, because 'the Department of Industrialisation had no industry under its management'.⁷⁹ Its first acquisition was a small plastics factory with a mechanics workshop owned by Segismundo Pons, a tram driver and mechanic who had financed the PSP before the Revolution. His business was in financial difficulty in 1959, but when he offered to sell it to Guevara's Department they settled on establishing a mixed private-state enterprise. The head of sales at the workshop, Mario Zorrilla, another member of the PSP, was invited by Borrego to manage the chemical industry enterprise in the Department from March 1960.⁸⁰

Shortly afterwards, this mixed venture model was rejected as events determined the type of ownership which would exist in revolutionary Cuba. The new industries passing to the Department's jurisdiction fell into three categories: 'recovered industries', confiscated from Batista's collaborators who had left the country or who were tried in court and whose properties were passed onto the Department by the new Ministry of Embezzled Goods;⁸¹ 'intervened industries', factories or workshops where labour disputes had arisen because the owners had not paid salaries or production was interrupted for supply problems or lack of finances and which were passed to the Department of Industrialisation by the Ministry of Labour; and 'nationalised industries' which were transferred according to the nationalisation laws, including businesses previously recovered or intervened.

The Department's second business was a tile factory whose owner, a collaborator of Batista, had fled for the US without paying his 20 workers. The third business was American Steel, whose closure several years previously had left hundreds of workers without jobs. With just three factories, Borrego

admitted: 'we already considered our organisation to be something important from the "productive" point of view'.⁸² However, the Department had no funds. A national campaign was underway to raise funds for INRA because the Treasury had been depleted. Ruiz proposed selling revolutionary Christmas cards to raise money. Guevara loved the idea and got famous Cuban artists to design them for free: 'We printed and sold millions', recalled Ruiz.⁸³

Throughout Cuba people donated money or jewellery to build up the country's gold reserves. Borrego, Ruiz and other revolutionaries without dependants donated 50 per cent of their salaries to INRA's funds. Individual contributions were institutionalised when, under pressure from the US, western European banks refused to grant credit to Cuba in March 1960. On 18 March, a new law put 4 per cent of workers' salaries towards a fund for industrialisation.⁸⁴ A week later another law took 10 per cent from government ministers and the President of the Republic to fund industrialisation.

Nationalisations and the search for new administrators

The first business 'intervened' by the new government in March 1959 was the US-owned Cuban branch of the International Telephone and Telegraphy Company. Officially this was to investigate irregularities in its operations – effectively, it was the first nationalisation. The company, and the team of public accountants who carried out the intervention, were then incorporated into the Ministry of Embezzled Goods along with all other confiscated properties.⁸⁵ Nationalisations gathered apace. In July 1960 alone, the book value of US industrial enterprises nationalised was \$800 million.⁸⁶ There were two major nationalisation laws in October 1960 – the Urban Reform Law passed on the 14 October, nationalising all commercially owned real estate and all large industrial, commercial and transportation companies, including 20 with US owners. This left around 200 small US companies in private hands. On 24 October, in response to US measures to cut off trade with Cuba, all remaining US properties in Cuba were nationalised. The tit-for-tat retaliations between Cuba and the US are well documented.⁸⁷ Holding the fort at the Department of Industrialisation, Borrego lived through the excitement, uncertainty and intensity of this period at Guevara's side. Emergency measures were decreed following long meetings through the night. He recalled one occasion when Guevara telephoned him from the Council of Ministers meeting in the small hours to announce that the Department had until morning to find managers for the 200 factories, including 80 sugar mills which had just been nationalised.

I nearly had a heart attack! Where were we going to find them? I only knew about three people with any accountancy experience. Half an hour later Che called me again and said 'Fidel has an idea, a solution.' There was a boarding school with 200

youngsters aged between 15 and 20 years old, training to be voluntary teachers for the Sierra Maestra. Fidel said ‘We will nominate them as managers of the factories.’ I was shocked! Minutes later Fidel called to tell me to go to the school to wake them up even though it was the middle of the night. He arrived at 4am. The students went mad with joy, throwing their things up in the air. They were very happy to be told they would be managers.⁸⁸

Back at the office, Borrego had a few short hours to produce some official paperwork for the youngsters to take with them to the factories as verification of their employment. There were no computers. He made a template on a typewriter, with a gap for the student’s name and the factory they were to manage and reproduced 200 copies with a stencil. There was another problem. French philosopher Jean-Paul Sartre was arriving in Cuba with his wife Simone de Beauvoir and Borrego was supposed to receive them. He combined the two tasks, inviting them to witness the distribution of certificates to the student managers: ‘Sartre’s eyes were coming out of his head. I asked him what he thought of the process. “You are crazy!” he said “They are adolescents!”’⁸⁹

Eugenio Busott, a poor Cuban from the east of Cuba who worked for the investigations department of the M26J as an undercover agent inside a sugar mill, explained that these teenagers were able to take up their management positions because they received support from the trade union workers – particularly in the sugar mills where the working class was very strong – who accepted the authority invested in Borrego’s stencilled certificates. The million Cubans who left in the first years of the Revolution were those who managed the country, he explained, and they had to be substituted by workers and peasants who lacked education, skills and experience. Many of these youngsters were replaced as the Department, and later the Ministry of Industries, trained more appropriate substitutes and they returned to their original teaching vocations. Busott took over management of 22 sugar mills and ten distilleries, ‘even though I didn’t know how to manage anything’.⁹⁰

This experience moulded Guevara’s approach to industrial organisation, convincing him that commitment to the ever-radicalising Revolution was as important as technical experience in industrial leadership and highlighting the importance of collaboration between the administrator and experienced workers. No measure that was considered politically expedient to secure economic independence should be avoided for functional considerations. Such problems could be resolved *sobre la marcha* (on the move) with education, political work and discipline.

Guevara was committed to state ownership under socialism and the socialisation of the means of production, but it was the dynamism and fluidity of the revolutionary consolidation and the break with the US which

determined when and how the nationalisations took place. One example came from architect Ruiz who claimed to have inadvertently spurred the nationalisation of the steel industry. The original architect overseeing the National Bank construction project renounced the Revolution and left Cuba and Ruiz had taken over, sleeping underground in the bank vault at night. He was informed that the stock of belying pins, vital in construction, would run out within two months. There were three US-owned factories which made the pins in Cuba, with raw material imported from the US. But in early summer 1960, the owners of those factories declared that they would not import or produce more. This would be disastrous: the Revolution had embarked on ambitious construction projects – homes for peasants and in the urban slums, roads in rural areas, and recreational facilities for workers, and so on.

I took the information on one page to Che in the National Bank. It was evening. Che was hurrying out and said ‘Don’t give me bits of paper now – I am going to the Council of Ministers.’ I said ‘This is for the Council of Ministers’ and he replied ‘Well then, do give me bits of paper.’ It read: ‘*Comandante*, here is the number of belying pins that will be produced in Cuba and how many we need to consume. Greetings, Jorge.’ And below that was a table showing the figures. The next morning my secretary threw me the newspaper. The headline said ‘Nationalised – the Steel and Iron Industry in Cuba!’⁹¹

A cross-class, anti-imperialist nationalist impulse drove the confrontation with foreign firms, particularly from the US, uniting many middle-class Cubans together with workers and peasants in the struggle for independence with social and economic justice. For professionals who stayed to work in Cuba the decision often involved turning down the offer of pay increases elsewhere. Ángel Arcos Bergnes was an auditor in the US Verientes Sugar Company on a good salary of \$1,200 in 1959. Arcos worked undercover for the M26J, revealing his true political affinity when he turned up as a representative of the government to announce the nationalisation of the sugar mill he worked at: ‘It was one of the most powerful, moving moments in my life’, he recalled. Shocked to see where his loyalties lay, his bosses offered to double his salary if he left Cuba for the US. He refused: ‘That day I committed class suicide. I ceased to represent the interests of the petit-bourgeoisie in order to continue with the revolutionary process.’⁹²

Arcos and individuals like him were vital, but not plentiful. The Department searched frantically to find new administrators for the hundreds of businesses put under their management. The working class and rural masses carried the Revolution, but they lacked basic administrative skills for the tasks in hand. Every afternoon Borrego would rush into the Department with a list

of the latest factories and businesses that had been nationalised and needed administrators. Ruiz was among the small group of staff with the challenge of filling these posts:

Borrego would say: 'We need a head of production relating to metal balls – call so-and-so. An enterprise that produces things to do with optics in Matanzas – ring thingy, he's designated as director. A sugar mill in such a place – who here is from that province? Send them there!' These were comrades from the Rebel Army, or a friend who you knew more or less. Borrego would say: 'Who do you have there? What are they? An engineer! Send that one! And you know them? What kind of person is he? He's clean, wasn't he with Batista?' It was just like that. We didn't have any more time.⁹³

New administrators with low educational levels were suddenly in charge of complex production units, often with hundreds of employees. The ideal was to find people with accountancy training or administrative experience, but principally they had to be honest and loyal to the Revolution. Before 1959, public accountancy could be studied at night schools, so there were working-class accountants. But basic accountancy was far short of the kind of technical and managerial know-how necessary to run some of the sophisticated modern industries in Cuba, particularly the US firms and their subsidiaries. Advisors and technicians poured into the island from Latin America and, later, from the socialist bloc countries, but the first step in the battle for control of Cuba was for the Revolution to move its people into place to begin to take over and then transform the power structure.

Grouping industries and centralising finances

The businesses transferred to the Department of Industrialisation ranged from modern technology plants to artisan workshops. Financially, they ranked from profitable to bankrupt. Guevara devised two structures to deal with this problem and they proved elemental in the development of the BFS over the following years – the centralisation of administration and the budgeting of finances. These measures were not the result of an ideological preference for centralisation *per se*, but an organisational response to a lack of specialists and revenue.

Diverse production units were grouped according to industrial sector, rather than territorially. Concentrating the administration of these businesses aimed to overcome the shortage of technicians, engineers and managers whose work could be distributed more efficiently between them if the Department had an overview of their problems and progress. The new structure was devised collectively among those in the Department. The next task was to find an

appropriate name for these groupings. Ruiz was involved: ‘We were discussing it with Borrego. Che wanted “trustifica”, like the English word “trust”. I said “We are consolidating.” Che said: “That’s the word: *Consolidado!*” [consolidates].’⁹⁴ Later, when the Department of Industrialisation became the Ministry of Industries, the title was amended to Consolidated Enterprise (Empresas Consolidada – EC).

More serious was the problem of financing production – preventing production stoppages where factories lacked the revenue to pay salaries, buy supplies and pay for maintenance and repairs. The solution again was to centralise. The funds of every business were deposited in a central bank account from which they were allocated a budget to cover the costs of production and salaries. Surpluses from the highly profitable enterprises – cigarettes, beer, soft drinks, cosmetics, cleaning materials and oil refineries – could be reallocated via the budget to the hundreds of tiny workshops and small factories which were broke or struggling.⁹⁵ These firms could then continue to operate, ensuring their products remained available and avoiding unemployment. The Department of Industrialisation’s bank account which Guevara set up as President of the NBC was held in BANFAI until the bank nationalisations when it was transferred to the Treasury.

Thus the shell of the BFS of economic management was created. It was a practical measure to ensure the continuation of artisan and industrial production. The ideological aspects of the BFS were gradually added as the Department of Industrialisation secured control of production and Guevara’s theoretical analysis developed. The first step was for the Department’s staff to visit all their new businesses to estimate an annual budget, adding up the payroll and main expenditures for each business. The budget duly allocated, it was the administrator in each workplace – often these inexperienced young workers and peasants – who was responsible for ensuring the funds were applied as planned, because once spent they could not get credit from the bank, other enterprises, or from the Department of Industrialisation itself. The financial discipline demanded was a sharp learning curve for the new administrators. Harry Villegas, a squad leader in Guevara’s Rebel Army column and his bodyguard and housemate throughout 1959, recalled his experience as intervening administrator in a mixed Cuban-Mexican enterprise which sold insulators and tiles:

I had read in a student’s thesis about the possibility of making homogenous glazed earthenware, so I tried to make it with Coca-Cola bottles. I invested the whole budget to test the idea. Che told me that if it didn’t work I would have committed a technical misappropriation and would receive a strong penalty for deviating from the budget. I spent nights watching that little oven rotating full of Coca-Cola bottles to see if

they would arrive at the temperature necessary to obtain this glassed earthenware. Finally, I was saved! I ran to our house and waited for the morning to give him the good news.⁹⁶

Guevara convinced these young guerrilla fighters accustomed to the discipline of military life that the struggle to secure production and nationalise industry was the continuation of the battle against Batista. There were no guidelines to follow, so at every level of the Department of Industrialisation there was this tense and exciting search for solutions as *compañeros* pushed themselves to understand and resolve dilemmas. When big problems or debates arose, everyone would muck in, as Ruiz recalled with amusement.

We'd go to the library or we sent for books and we spent an entire night arguing. There would be one person here, two over there, everyone reading, and soon someone would exclaim 'Oh it's here, I've got it!' And another would reply 'No, look what I've got here!' We would have a tremendous discussion all night. We didn't sleep and then carried on with our work the next day. When we had a problem we grappled with it until we knew how to resolve it. We found a solution and afterwards we continued reading and we went on improving. We weren't theoreticians. There were some theoreticians, but there weren't many.⁹⁷

This was *sobre la marcha*, learning by doing, the dynamic between theory and practice, cause and effect, conflict and resolution, the consolidation of the Revolution and the emergence of the BFS. Guevara lived this process with his Cuban colleagues and it fed into the formation of his economic management system. They studied existing laws, created new laws, formulated the enterprises' plan of production, decided how to control the factories within the consolidates and determined relations between the consolidates and ministry, the ministry and the central government. Enrique Oltuski, a leading member of the urban M26J, worked with Guevara on this process: 'This work took us months. The ideas were taken to the Management Council for debate and approved or adjusted. Che generated many ideas, taking decisions as we went along.'⁹⁸

Guevara and his colleagues claimed that the BFS took key managerial precepts from the US monopolies and subsidiaries operating in Cuba and adapted them to a socialist planned economy. There was no contradiction in basing a socialist economic management system on capitalist corporate structures, and Guevara realised the logic of this process as his Marxist analysis deepened. Marx had argued that communism would arise out of the fully developed capitalist mode of production and he showed how the tendency to the concentration of capital, to monopoly, was inherent in the system. Therefore, the monopoly form of capitalism is more developed than a 'perfect

competition' or 'free market' stage of development. The Soviet system was built upon early and underdeveloped capitalism, incomparable to the technologically and administratively advanced firms in Cuba. Guevara was certain that a socialist economic management system which emerged out of monopoly capitalism would also be more advanced, efficient and productive.

This may not have been Guevara's perception as early as 1959–60. But it was during this period that he began investigating how the monopolies operated in Cuba, noting their efficiency. Juan Valdés Gravalosa, a lawyer who joined the Department of Industrialisation in October 1959 as a legal advisor and secretary of the Management Council, explained how Guevara analysed the accounting systems of US companies as they fell into state hands with the nationalisations:

In the first days of the Department of Industrialisation one of the US enterprises nationalised was the US-owned Cuban Electric Company. The enterprise's documents came to the Department. Che examined them himself and noted that when there was a problem such as costs had gone up or productivity had gone down, immediately an accountant came from the US to analyse and take measures before returning to the US. This stirred his curiosity to understand how the economy of the monopolies functioned.⁹⁹

Oltuski and Menéndez were particularly influential in advising Guevara on the efficiency of the monopolies. Both had experience of capitalist corporations, unlike Guevara who lacked experience of business or management. During the 1950s, Oltuski had studied architecture in the US and specialised in the Organisation of Work Management with the intention of founding a construction company in Cuba. However, he returned during the Batista dictatorship and got involved in the struggle. He used his position as an executive in the Shell corporation as a cover for an underground life leading the M26J in Las Villas province.¹⁰⁰ Oltuski pointed out that management structures are similar under any system – with departments for personnel, accountants, technicians, administrators, and so on.

I had mastered all of these things in my studies in the United States and I applied them in the structure of the enterprises we were creating [in 1960] ... All of this was part of my technical formation. We discussed it, Che and me. We spoke about the common structures of both systems – capitalism and socialism.¹⁰¹

Alfredo Menéndez gained experience in the Cuban sugar industry, particularly with the US corporations which operated under what he called the budgetary finance system.

I had applied the budgetary finance system in the sugar industry and with the banks under capitalism, so I explained it to Che. No bank lent money to any sugar mill that was not part of its budget. Che asked himself how it was possible to manage mills in Cuba from New York. He began investigating the system more deeply and concluded that it was more advanced than the system applied in the USSR, which was created in 1927 with few elements of automation. Che said that although the integrated budgetary system of accounts belonged to the multinationals it could still be used. The US subsidiaries that functioned in Cuba – the electrical industry, sugar and petroleum – used the budgetary system.¹⁰²

Building socialism, however, required more than just productive efficiency. It required a new style of management in which administration is passed over to the workers. Existing directors were given space to experiment. Guevara analysed their work, applying their methods where successful. One example was a consultative evaluation process devised by Mario Zorrilla to promote healthy competition for efficiency between the factories under his management.¹⁰³ As head of the Chemical Consolidate, Zorrilla instructed administrators in his group to submit monthly reports about their progress. The reports, which grew with the administrators' confidence and the complexity of their operations, were analysed collectively by all those concerned: heads of personnel and production, legal and financial sections, and so on. After the discussion, Zorrilla ranked the workplaces' performance from best to worst and sent the reports to Borrego and Francisco Vals to demonstrate the branches' progress.

Guevara analysed this procedure and was impressed with Zorrilla's initiative – a control mechanism which simultaneously encouraged administrators to have an overview of the sector and induced healthy competition between them to improve their ranking. Consequently, and after consultation with his colleagues, Guevara named Zorrilla as Vice Minister of the Economy when the Ministry of Industries was founded in February 1961. Zorrilla lacked confidence: 'I went to see him and complain that I was not an accountant or an economist. He said he knew even less!'¹⁰⁴ Zorrilla's procedure was developed within the ministry at every level, from the four-hourly technician reports in the non-stop nickel industry to the comprehensive annual enterprise reports which formed the basis for the ministry's annual plans and reviews. It became integral to the BFS, a key element in a system of administrative controls which served as an alternative mechanism to the financial control pursued by the Soviet bloc system with its reliance on material incentives and other capitalist mechanisms to motivate directors and workers.

Zorrilla's Chemical *Consolidado* had three factories when he began in March 1960. By the end of the year, following the interventions, recuperations

and nationalisations, it had mushroomed to 97 factories. Similar growth in the state sector was experienced in every branch of industry, most of which was now under state control. The Department of Industrialisation's property included 161 sugar mills, three oil refineries, electric power and telephone plants, and tobacco, metallurgical, textile, pharmaceutical, chemical and food factories.¹⁰⁵ Cuba was a country which, unlike much of Latin America, had not previously had nationalised industries. To these were added the factories and plants purchased by Cuba's first delegation to the socialist bloc countries, a trade mission led by Guevara himself.

TRADE MISSION TO THE SOCIALIST BLOC

The delegation set out on 21 October 1960, two days after the US introduced a partial blockade of the island. But this was no rash reaction, Guevara was armed with a list of imports required, exports for sale and revenues available, which had taken BANCEC two months to prepare and was to form the basis of trade agreements covering the whole of the following year. Boorstein reported: 'The data prepared for Major Guevara's trade mission to the socialist countries in November and December of 1960 constituted, however imperfectly, a plan.'¹⁰⁶ The delegation visited the Soviet Union, Czechoslovakia, China and East Germany, before Guevara split off to visit North Korea while Héctor Rodríguez Llompart, then Vice Minister of Foreign Relations, led the rest of the delegation to Vietnam. After two months abroad, Guevara returned to Cuba leaving Llompart to continue on to Poland, Hungary, Bulgaria, Romania and Albania.¹⁰⁷

Even before arriving on Soviet soil for the first time, Guevara was cautious about the political economy of the USSR, armed with his own observations in Yugoslavia, his reading and conversations with Soviet advisors, critics and supporters. International Marxists like Paul Sweezy, Leo Huberman and Paul Baran had been in Cuba expounding their own critiques of the Soviet system. Borrego said: 'Che read about the law of value being at the centre of the capitalist mode of production in Marx's *Capital* and then read Soviet manuals talking about using the law of value. He also disagreed with the law of value operating in trade between socialist countries. He developed that idea by the end of 1960, and it was fully developed between 1961 and 1962.'¹⁰⁸

Given his own rudimentary political and economic education, Borrego lacked the theoretical base to analyse the Soviet economy at that time. However, like Guevara he observed 'backwardness in administrative techniques, a low standard of living compared with Cuba's average, a contradiction between the level of development of science and technology in the arena of space, military technology and the scarce application of technology to production'.¹⁰⁹

In general, he found the workers hard-working, positive and enthusiastic about their system, despite the low standard of living, although he noted a distance between the leadership and the rest of the population. The USSR was going through a period of reforms. Instead of moral incentives, they talked about material incentives, profit and other capitalist categories, which Guevara began to criticise for creating a hybrid system. His analysis was evolving.

The trade mission to the socialist bloc had tangible results, including 4 million tons of Cuban sugar sold at four centavos a pound, substantially higher than the world market price. Cuba received millions of pesos-worth of credit for purchasing capital and consumer goods. The Soviets would adapt petrol refineries, aid with prospecting for Cuban oil, help to develop the nickel mines and assist electrification of the country. On his return, Guevara announced that ‘more than 100 contracts have been signed to establish plants during the five-year period 1961–65, and an equal number of plants are in discussion to be acquired in the course of those five years’.¹¹⁰ The means of production purchased from the socialist countries were added to those confiscated, recovered and nationalised, in the organisational and financial shell of the BFS.¹¹¹

With the new acquisitions from the socialist countries, it was clear that the Department of Industrialisation’s possessions had outgrown it and a separate ministry was needed to drive the state’s industrialisation programme (see Figure 2.1). By the time it was converted into MININD in February 1961, there were eight branches of production and 40 Consolidated Enterprises. Additional entities previously in INRA were also transferred to MININD, such as the Cuban Institute of Petroleum and the Cuban Institute of Mining, which were incorporated as Consolidated Enterprises. Zorrilla’s chemical *Consolidado* became twelve separate Consolidated Enterprises within MININD.

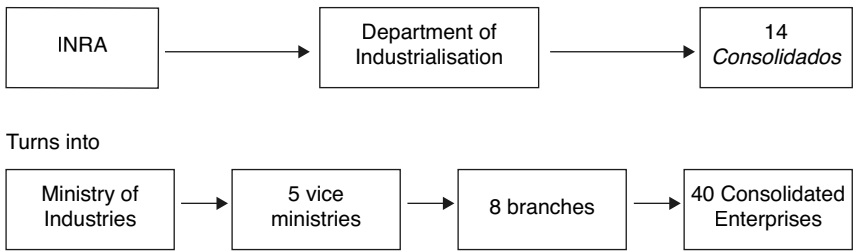


Figure 2.1 From Department to Ministry, 1959–61

MININD’s five vice ministers were in charge of Basic Industry, Light Industry, Industrial Construction, Technical Development and the Economy. Later, four branch heads were added to each of the first two vice ministries. Below these

were the Consolidated Enterprises (ECs), which grouped production units into sectors. The head of the EC was called a 'director'; the head a production unit was called an 'administrator'. The number of entities under each EC depended largely on the technological level of that sector. For example, the EC of Petroleum controlled just three refineries while the EC of Flour grouped hundreds of small bakeries. By far the largest was the EC of Sugar, which incorporated 200,000 workers. This was under the Vice Minister of Basic Industry before being split off as a separate ministry headed by Borrego in June 1964. Throughout Guevara's period as minister during 1961–65, MININD's structure continued to expand and transform with the increasing complexity of industry and as changes were made the organisational structure, for example, in introducing more or less centralisation. By 1967 MININD had split into five separate ministries: Sugar, Foodstuffs, Light Industry, Electrics and Basic Industry.

CONCLUSION

Guevara was central in driving the structural changes which transformed Cuba from its underdeveloped semi-colonial status to political and economic independence and integration into the socialist bloc between 1959 and 1961. By the end of this period, the revolutionary struggle against Batista had embarked on a socialist path. While Guevara did not take a prominent position in the first government, he was engaged in devising policies which radicalised the Revolution. In the military sphere, influenced by the experience of Guatemala, he directed the purge of the ousted dictatorship, transforming the Rebel Army into the official armed body of the new state. Despite the pomp and ceremony of the new liberal government in Havana and the machinations of Washington, real power lay with the left wing of the revolutionary movement who held military power. Guevara participated in setting up an intelligence service that included support for overseas insurrections which, ultimately, was his incentive for returning to South America.

In the economic sphere, Guevara helped draft the Agrarian Reform Law which, even while redistributing little land, violated the principle of private ownership and directly attacked US landowning interests in Cuba. Unlike in Guatemala, land reform was backed up by the military force of the new state. The Agrarian Reform Law created INRA which served as the principal vehicle for consolidating the Revolution to the left. Guevara was prominent in INRA as head of the Department of Industrialisation after leading the first overseas mission for the revolutionary government to broaden Cuba's economic and political ties in anticipation of the break with the US. The trip provided him with insights and inspiration for industrial development

strategies. His second overseas tour, which took him around the socialist bloc, heightened his awareness the challenges and contradictions of the political economy of socialist transition.

Guevara's promotion to the Council of Ministers in late 1959 reflected the radicalisation of the new state and signalled the dismantling of the pre-1959 power structure and its replacement with the new scaffolding of a society in transition to socialism. He oversaw the nationalisation of the banks as President of the NBC and the nationalisations of industry as head of the Department of Industrialisation – measures which created the forum for experimentation in meeting the challenges created by economic transformation. Thus, the shell of the BFS emerged. After six years of military conflict and destruction, with domestic class war and US imperialist aggression escalating, the process of institutionalising the new apparatus for the organisation of industry was dynamic and participatory, influenced by many individuals who collaborated with Guevara.

The BFS gained organisational and theoretical cohesion with the experience of management and as Guevara's Marxist analysis deepened. Meanwhile, INRA and the Ministry of Foreign Trade applied the Auto-Financing System of economic management developed in the USSR, introducing operational contradictions within the new state. Commentator Bertram Silverman observed that, 'In 1963, when the argument reached the light of day, there existed in Cuba two systems of economic organization and ideology: one regulating agriculture and foreign trade, the other, industry. A confrontation was inevitable.'¹¹² On the theoretical plane this conflict was known as the Great Debate.

3

The Great Debate

Decades before the invention of the light bulb, Marx and Engels had envisaged communism as arising in the most developed capitalist countries. Those societies would already have a huge accumulation of wealth and technology that the working class would appropriate to liberate itself from exploitation. In reality, the only countries that had attempted to construct socialism were under-developed, lacking large accumulations of capital for investment, advanced technology, and dominant industrial proletariats.

The Soviet solution had been to use capitalist tools – competition, the profit motive, material incentives, credit, and interest (expressions of the law of value) – in an attempt to speed up the industrialisation process. Following his observations in Yugoslavia 1959, Guevara was sceptical about this approach. He argued that depending on capitalist levers of production, without recognising the need to change people's attitudes and values, would reproduce capitalist social relations and consciousness. His opposition to the USSR's economic management system known in Cuba as Economic Calculus or the Auto-Financing System (AFS) deepened as he studied more and gained experience.

In January 1962 he told colleagues in the Ministry of Industries (MININD): 'In no way does that mean that financial autonomy of the enterprise along with material incentives, in the way it is established in the socialist countries, is going to be a formula which impedes progress to socialism, or anything like that.'¹ Less than three years later, however, in December 1964, he described a system being experimented with in a factory in the USSR as capitalist, and pointed out that 'when it is transferred from one factory to the whole of society, it will create the anarchy of production, a crisis will come, and then socialism will have to return'. There was not yet capitalism in the USSR, he added, but 'the theory is failing, because they have forgotten that Marx existed'.²

During the period between these two statements, Guevara was involved in a debate on the political economy of transition to socialism. He immersed himself in a study of Marx's *Capital* and other classic Marxist texts, as well as modern literature, from east and west, both in favour of 'market socialism'

and against the Soviets' use of capitalist mechanisms. He concluded that the Soviets had created a 'hybrid' system, lacking the efficiency of the 'free market', with its aggressive fight for profits, because the state plan and legally defined relations of production prevented exploitation and capitalist accumulation, and also failed to foster the collective consciousness in workers which was a precondition for socialism and communism. Socialism not only has to produce for the material needs of workers, but it also has to promote the fullest possible development of human beings, placing them, and not profit, at the centre of society and development.

Guevara engaged in this theoretical inquiry whilst simultaneously setting up his alternative economic management system, the Budgetary Finance System (BFS) within MININD.³ He used the BFS to test his assertion that it was possible and necessary to raise consciousness and productivity simultaneously, even in an underdeveloped country, in the process of socialist construction. Fidel Castro secured Guevara the institutional space and the authority he needed to experiment:

Che had an exceptional opportunity during the first years of the Revolution to go deeply into important aspects of socialist construction ... he confronted the task of applying the principles of Marxism-Leninism to the organisation of production, as he understood them, as he saw them. He worked at this for years, he spoke a lot, he wrote a lot about all those themes and really he developed a theory that was very elaborate and very profound about the way in which, in his opinion, socialism should be constructed and progress towards communist society.⁴

Many Cubans were reluctant to accept the audacity of Guevara's challenge to Soviet orthodoxy, especially in the context of a young revolution, blazing its own trail to socialism under the shadow of the US eagle. The revolutionary government's first redistributive measures spurred a period of economic growth, but by 1962–63 national output and worker productivity began to decline as the shocks of profound structural change set in: new institutions, new social relations of production, new trade relations, the exodus of professionals and the imposition of the US blockade. This was also the result of the rash implementation of policies whose consequences had not been fully analysed. For example, eager to industrialise their way out of mono-crop dependency, the sugar harvest was denigrated, but the fall in export earnings exacerbated by the US blockade reduced Cuba's capacity to import the raw materials and spare parts required for industry. Labour shortages in the countryside led to increased reliance on voluntary labour for agricultural work. Inevitably, some Cuban economists and planners believed that these problems resulted from excessive centralisation and the lack of financial incentives to individuals

and enterprises associated with Guevara's economic management model. They hoped that by adopting the tried and tested Soviet system, rather than Guevara's innovative alternative, they could reverse this trend. This juncture coincided with increasing integration into the socialist bloc via trade and human exchange; Cuban students went to eastern Europe on scholarships while the socialist countries sent technicians and economists to Cuba. These advisors advocated the USSR's AFS with decentralisation and financial autonomy for enterprises, rejecting the BFS model of centralised control of administration and finance.

Among Guevara's challengers were Cubans committed to the Soviet road to socialism as members of the Popular Socialist Party (PSP). However, this was not a division along party lines.⁵ While Guevara's most prominent opponent was Carlos Rafael Rodríguez, a PSP leader and President of the National Institute of Agrarian Reform (INRA) from 1962, other opponents were members of the 26 July Movement (M26J); for example, Alberto Mora, Minister for Foreign Trade (MINCEX) from 1963, and Marcelo Fernández Font, President of the National Bank of Cuba (NBC) from 1963.

The AFS was adopted in INRA by Rodríguez and in MINCEX by Mora. It meant financial decentralisation for enterprises which functioned as independent accounting units responsible for their own profits and losses and, in the case of INRA, was similar to the *khozraschet* model of cooperative farms in the USSR.⁶ On 23 August 1963, both the BFS and the AFS were endorsed by law, although they had been implemented prior to that. There were now two competing economic management systems, operating under one Central Planning Board (JUCEPLAN), one central bank and one Treasury. This created the institutional conditions for what became known retrospectively as the Great Debate.

All ministries received a state budget allocated by JUCEPLAN, but the economic management system they operated had practical implications affecting their organisational structures, policies, the financial relations between state institutions, relations between producers and consumers, and so on.⁷ However, because the proponents of the different systems sought vindication in Marxist literature, the discussion assumed the character of a theoretical, rather than a practical debate. Inevitably, there were discrepancies between the theory and the reality of implementation with both systems. The theory was the conceptual paradigm which guided the practical policies, while daily experience also fed back into the theoretical constructs. The main differences in the proposals of the two systems are summarised in Table 3.1.

The Great Debate took place concurrently with a broader discussion within the socialist bloc as part of a rightward push to 'liberalise' the planned economy, advocating 'market socialism' which meant introducing more capitalist mechanisms to solve the problems of economic stagnation and bureaucracy.

Table 3.1 Main theoretical and organisational differences in the structures of the Budgetary Finance System and the Auto-Financing System in Cuba

Budgetary Finance System	Auto-Financing System (also known as Economic Calculus)
Enterprise: Workplaces grouped into <i>Consolidated Enterprises</i> according to industrial sector. Finances and administration centrally controlled.	Enterprise: Each workplace has its own juridical identity. Responsible for its own finances.
Money: Functions as unit of account, as a price reflection of an enterprise's performance, to be analysed by central bodies. Enterprise does not have own funds, cannot take loans or give credit.	Money: Functions as means of payment as well as unit of account; an indirect instrument of control, since funds are necessary for the production unit to operate. Enterprise has own funds in bank and can get credit.
Bank: Holds separate accounts for withdrawals and for deposits of enterprises in accordance with the national production plan.	Bank: Relationship to enterprise similar to those of private producer and capitalist bank. Enterprises must explain plans and prove solvency; can take loans. Decisions are, however, subject to a national plan.
Incentives: Individual and collective material incentives are a necessary concession, but limited by the method of wage and bonus payment – not the main lever to production. Compulsory professional training is a precondition for promotion to higher wage categories. Moral incentives play a progressively more important role and are an incentive to developing socialist consciousness, via mechanisms like voluntary labour.	Incentives: Material self-interest is the main lever for increasing productivity, both collectively and individually, developing the productive forces as a precondition for creating socialist consciousness. Material incentives are applied through the payment of bonuses for production over the norm and as a reward to exceptional workers.
Law of value: Partially operative because the remnants of commodity society still exist, but undermined by the plan (its antithesis) and new social relations. There are no commodity categories in exchanges between state enterprises. Cost-cutting, not profit, is the key to evaluating enterprise performance.	Law of value: Underdevelopment explains existence and <i>utility</i> of law of value in transition to socialism. The law must be considered in the plan. Commodity relations remain in exchange between enterprises. Financial profitability is the key to evaluating and stimulating production.
Prices: All imported raw materials have fixed, stable prices based on international market prices. Cuban enterprise product prices are made on basis of costs and not profit and must be compared to international prices reflecting world productivity. Retail prices are adjusted for basic needs.	Prices: Determined in relation to the law of value. Price to consumer is determined by supply of goods in relation to effective demand.

Yugoslavia, Czechoslovakia and Poland led this reformist drive in the 1950s and early 1960s. In 1962 Evsei G. Liberman, a Soviet professor in the University of Kharkov, Ukraine, published an influential article in *Pravda* recommending that the profit motive, not the production plan, become the main driver of productive efficiency, pursued via material incentives. Liberman's proposals, like those of many others, were a response to low productivity and efficiency, particularly in comparison with economic growth in the developed capitalist world. The protagonists in Cuba were well-informed about the broader debate on incentives and financial autonomy for enterprises. In July 1964 Guevara told colleagues that he had been reading analyses from the socialist camp, including the resolutions of the 14th Congress of the Polish Communist Party: 'The solution that they are proposing for these problems in Poland is the complete freedom of the law of value; that is to say, a return to capitalism.'⁸ Historically, however, at that point it was not so evident that 'market socialism' was a step towards the restoration of the capitalist mode of production. Indeed, a core premise of the debate was the shared objective of constructing a socialist society in transition to communism.

As members of the Council of Ministers, several participants in the Great Debate had studied *Capital* together with Professor Anastasio Mansilla, a Spanish-Russian political economist whom the Soviets had sent to Cuba to provide the new leadership with a Marxist education.⁹ At his invitation, in September 1961, Mansilla began weekly *Capital* seminars in MININD for Guevara, his vice ministers, advisors and invited guests.¹⁰ The Thursday seminars began at 9pm, often lasting through the night until 5am or 6am. Every week, without prior warning, Mansilla would select one student to present the material. Guevara's deputy, Orlando Borrego, recalled an all-night argument about the average rate of profit and the role of the law of value under socialism when, at 4am, unable to settle it, Mansilla threw up his hands in defeat and exclaimed that Guevara was right.¹¹ Francisco Buron Seña said he continued to attend the seminars after leaving MININD: 'because Che's analysis when he confronted Mansilla was very illuminating, profound and educational'.¹² Another participant, Ángel Arcos Bergnes, claimed that 'Professor Mansilla was shocked by some of the criticisms from Che.'¹³

The Great Debate has been variously interpreted as: an argument about the operation of the law of value under socialism;¹⁴ a disagreement about the use of moral incentives;¹⁵ a dispute over the level of financial (de)centralisation of enterprises;¹⁶ a conflict between the notion of *Cubanidad* and the New Man in a vision of utopia;¹⁷ and a power struggle within the Cuban leadership.¹⁸ Furthermore, there is no real agreement about what exactly constituted the Great Debate. Belgian Marxist Ernest Mandel, one of two foreign contributors and the first to label the dispute 'the Great Debate', said that it consisted

of around 20 published articles, half a dozen of them by Guevara.¹⁹ The articles appeared in *Nuestra Industria Económica*, the journal of MININD; *Cuba Socialista*, the journal of the revolutionary government; and *Comercio Exterior*, the journal of MINCEX.²⁰ However, INRA president Rodríguez, who is recognised as Guevara's main opponent, did not publish on political economy in this period. Guevara and Rodríguez battled it out fraternally as *compañeros* on the government's Economic Commission and in the Council of Ministers.²¹ One of Guevara's vice ministers said that witnessing arguments between Guevara and Rodríguez 'was like watching a boxing match'.²²

Few Cubans had the theoretical knowledge to contribute to the polemic. In early 1962, Omar Fernández Cañizares was promoted from Vice Minister of Light Industries in MININD to be Minister of Transport (MINTRANS) where he claims to have instituted the BFS, organising the country's means of transport into Consolidated Enterprises. Even he admitted: 'I can't say that I understood the fundamental differences in that moment. I knew that there was a Great Debate because of the discussions which took place in the Council of Ministers and it was explained that there were two lines.'²³ Nonetheless, the debate penetrated Cuban administrative structures far deeper than the handful of published articles suggest. There were no manuals written about the BFS, and no seminars, lectures or training courses organised. Guevara talked about his system inside MININD, but for those outside the management circle, the articles were the principal means to learn about his alternative approach to socialist construction. People read and discussed them at their own workplaces. Alfredo González Gutiérrez, a graduate of electrical engineering who joined the energy department of JUCEPLAN in 1962, said most people in administrative positions followed the Great Debate passionately although they were not necessarily able to understand all its implications: 'Anyone who was directly involved in planning tried to understand this discussion. Planning was new and everyone was trying to understand it better. For people like me, Che's approach was a huge lesson. He was so theoretically and culturally advanced.'²⁴ Juan Borroto, director of Supervision in MININD, said Guevara criticised the Soviets severely in internal MININD meetings, but not publicly: 'It wasn't easy to understand what was happening. The Soviets were giving us everything and Che was criticising them.'²⁵ Jorge Ruiz, who began working with Guevara in 1959, recalled that when he opposed Soviet political economy in the MININD meetings, 'we stayed quiet. We didn't give our own critiques because we didn't have the necessary education.'²⁶ This is evident from the meeting transcripts.

Just once Guevara was challenged in a MININD meeting by Alberto Mora, a key adversary in the Great Debate. Mora had been replaced as head of MINCEX so Guevara invited his theoretical opponent to join MININD as an

advisor. In the bimonthly meeting of December 1964, Mora announced that he did not believe that the use of indirect methods, that is, capitalist mechanisms, to direct the economy necessarily diverted society from socialist construction. Guevara disagreed, claiming that the law of value was equivalent to capitalism. He concluded that one of them would be proved wrong but that the discussion would contribute to enrich and deepen an important polemic. He announced: 'Alberto has committed to work on a project that needs development and let's see where we arrive at.'²⁷ The project Guevara mentioned was being led by Juan Valdés Gravalosa, secretary of the Management Council, and it involved producing a document to define the model socialist enterprise. Valdés Gravalosa himself did not understand why Guevara had invited Mora, a defendant of the system he opposed, to work with him, or how that collaboration was possible: 'Che said that Alberto just has a different opinion, but this work could help him test if he was right or not.'²⁸ This is evidence indeed that, as commentator Michael Lowy stated, the debate 'proceeded in an atmosphere of dignity and mutual respect'.²⁹ The following summary of Guevara's position in the Great Debate is divided into three themes: the law of value; money, finance and banking; and consciousness and incentives. It demonstrates that the dispute about the operation of the law of value in the transition to socialism was at the heart of the Great Debate.³⁰

THE LAW OF VALUE

All the participants [in the Great Debate] supported the proposition that economic institutions and economic goals must conform to the necessities of objective economic forces ... But the protagonists disagreed about the nature of the economic laws that regulated Cuban socialist development. Thus, the Great Debate began with a controversy over whether the law of value operated in the Cuban economy.

Bertram Silverman³¹

Central to understanding Marx's critique of political economy is his analysis of the operation of the law of value. The law of value emerged as human societies progressed from subsistence to petty commodity production. Historically, this involved private ownership and production for exchange which required an increasing social division of labour. Every society adopts a method by which to regulate the distribution of the social product. The law of value is the social mechanism by which the principle of an equal exchange between private owners is enforced. Marx demonstrated that the law of value has a peculiar and paradoxical function. As an economic law, it predates but is then developed under capitalism, so that its operation is initially transparent but then obscured. Yet it provides the regulating law of motion of capitalism, in which it finds its most developed expression.

The activity of human labour itself – labour power – must become a commodity in order for capitalist production to develop. Commodities are the product of concrete human labour, but their constant and complex exchange gives the human labour expended a particular abstract, social, character. This abstract quality is thus an historical characteristic. Marx showed that under the law of value the quantity of abstract human labour embodied within commodities is the basis for their exchange. The two provisos are that the commodity is desired in exchange (it has a use-value) and that the labour time it embodies is socially necessary – that is, consistent with the average conditions of production.³²

Marx began *Capital* by stating that the wealth of societies in which the capitalist mode of production prevails presents itself as an immense accumulation of commodities. Because the commodity form is most developed under capitalism, its complete analysis was only possible under that system. However, under capitalism, commodities are no longer exchanged directly in relation to the labour time embodied in them, so their price no longer expresses that value in a simple, straightforward fashion. This change arises because different capitalists use different ratios of labour to means of production (machinery, plant, raw materials, and so on), producing different quantities of surplus value from a given capital investment. But capitalists are guided by a concept of equal returns to capital, refusing to invest where the rate of return is below the average.³³ Marx showed that because the operation of the law of value has to provide for an equalisation of the rate of profit, the historically earlier form of ‘simple prices’ is modified. Prices adjust to form a general rate of profit and are affected in this process by other factors such as rent, interest, final demand and competitor’s supply, to establish the eventual market price. The result seems to contradict the law of value. Marx set himself the task of demonstrating how, under capitalism, profits, rent and interest are also regulated by the law of value, and how market prices are ultimately determined by the same law. His analysis included the discovery of the actual mediating function of ‘prices of production’.³⁴

The dispute about the law of value in ‘transition economies’ is at the heart of the question about the feasibility of constructing socialism in a country without a fully developed capitalist mode of production, where development has been stunted by imperialist exploitation. The debate is integral to the problems of production, distribution, investment and social relations. The notion of an eventual communist stage requires a highly productive society in which the political conditions exist for social production to be directed towards the needs of the masses rather than the generation of private profit. ‘From each according to his ability, to each according to his need’ – the essence of communism

– implies that socialism has already been constructed and that society's products are no longer subject to rationing through market mechanisms.

However, the countries that have experimented with socialism have lacked the necessary productive base to complete the process and create the material abundance guaranteed by communism. Under such conditions, the problem of how to organise and direct the use of the social product is intrinsically linked to the problem of underdevelopment and scarcity. Communism will permanently block the reappearance of the law of value. The questions for transition economies are how far they are from the point where work is remunerated on the basis of need, why, and how they should strive to move towards a communist society. One answer which emerged in the socialist bloc by the 1950s was to utilise methods of production and distribution that allowed the operation of the law of value through the spontaneous and centrally unregulated processes of exchange with the aim of hastening the development of the productive forces. This urgent material concern was seen as a precondition to developing a socialist consciousness. Guevara warned that depending on the law of value to foster development would undermine collective consciousness, obstructing the construction of socialism and communism. Socialist countries had to find alternative levers to develop the productive forces, such as the national plan, investment in research and technology, administrative mechanisms and socialist consciousness itself.

The expression 'the law of value under socialism' has been used variously to denote the existence of: petty commodity production, as in the USSR prior to collectivisation; a socialist country's foreign trade, where goods are exchanged as commodities proper; and the constraints imposed by economic necessity on a socialist country. All the participants in the Great Debate agreed that the law of value continued to operate because commodity production and exchange through a market mechanism continued to exist after the Revolution. The social product continued to be distributed on the basis of socially necessary labour time. However, they disagreed about the conditions explaining the law's survival, its sphere of operation, the extent to which it regulated production, how it related to the 'plan' and, finally, whether the law of value should be utilised or undermined, and if so, how. This discussion was linked to practical questions such as how enterprises should be organised, how workers should be paid and whether means of production should be exchanged between enterprises as commodities. The Great Debate reveals a lot about the conditions and contradictions within the Cuban economy in the early 1960s. The starting point of the discussion, however, was defining the law of value.

Guevara stated that 'value' is brought about by the relationships of production. It exists objectively and is not created by man with a specific purpose.³⁵ He agreed that the law of value continues under socialism, but

added that ‘the law’s most advanced form of operation is through the capitalist market, and that variations introduced into the market by socialization of the means of production and the distribution system brought about changes that obstruct immediate clarification of its operation’.³⁶ In which spheres did the law of value continue to operate, and why?

Guevara insisted that products transferred between state-owned enterprises do not constitute commodities because there is no change in ownership: ‘We deny the existence of the *commodity* category in relationships among state enterprises. We consider all such establishments to be part of the single large enterprise that is the State (although in practice this is not yet the case in our country).’³⁷ ‘In expressing our concept of a single enterprise, we based ourselves primarily on Marx’s definition of commodity: “In order to be a commodity, the product has to pass into the hands of a second party, the one who consumes it, by means of an act of exchange.”’³⁸ Guevara insisted that commodity-exchange relations between factories threatened transition, via ‘market socialism’, to capitalism. He stressed central planning and state regulation as substitutes to such mechanisms. Cuba, he argued, should be considered as one big factory. Since the law of value did not operate in exchange between state production units, the workers themselves should decide what socialist, non-value-orientated economic policies to pursue in safeguarding society against capitalist restoration and achieving economic abundance. Guevara’s speeches to workers are replete with appeals for the masses to step up to this challenge.

Ernst Mandel agreed with Guevara, pointing out that if the means of production in Cuba were priced in relation to their inherent values during the initial phase of industrialisation they would cost more than their foreign equivalents because of Cuba’s low productivity. Arguing against the AFS, Mandel stated that the logic of giving ‘freedom’ to enterprises to maximise profits would lead them to purchase means of production from overseas suppliers. But the state monopoly on trade prohibited this; further evidence that the law of value’s sphere of operation was restricted.³⁹

‘It is universally accepted that under the dictatorship of the proletariat individualized production necessarily implies the maintenance of the “commodity” and “money” categories’, stated French Marxist Charles Bettelheim.⁴⁰ He complained about those in Cuba who doubted that the existence of such categories also requires the existence of a market and some freedom of exchange. Bettelheim argued that economic organisation could never be more developed, or higher, than the forces of production. The low technological level of production in Cuba explained the continued existence of the law of value and capitalist categories and attempts to legislate against this, or to

change the relationships of production in advance of the productive forces, would be detrimental.

Guevara responded:

Bettelheim commits two grave errors in analytical method: (a) He mechanically translates the concept of necessary correspondence between relationships of production and development of the productive forces, which is of universal validity, into the 'microcosm' of the relationships of production in concrete aspects of a specific country during the period of transition; and thus draws apologetic conclusions tinged with pragmatism, about so-called economic calculus [the AFS]. (b) He makes the same mechanical analysis of the concept of property.⁴¹

For Guevara, Bettelheim's deterministic formula was dangerously close to an 'orthodox' Marxist view that communism will evolve organically out of fully developed capitalism. Such orthodoxy ignores Marx and Engels' observations about how British imperialism underdeveloped Ireland and India, together with Lenin's view that imperialism blocks development in the colonies.⁴² Revolutionary socialism, Guevara's tradition, takes up Lenin's analysis to argue that defeating imperialism is a precondition for economic development and the transition to socialism.⁴³ Hence there may be no such mechanical correlation between productive forces and relations of production in the transition period. Mandel agreed, stating that 'The classic Marxist theorists unanimously agree that during the period of transition from capitalism to socialism there is no *integral correlation* among the mode of production, the relationships of production, the mode of exchange and the mode of distribution; on the contrary, there is a *combination of contradictory elements*.'⁴⁴ He pointed to Marx's *Critique of the Gotha Programme* to demonstrate that 'the principal contradiction during the transition period is between the non-capitalist mode of production [the socialisation of the means of production] and the bourgeois standards of distribution [the worker receives according to his labour]'.⁴⁵

In 1952, Stalin had maintained both that the law of value operated in the Soviet economy and that objective economic laws were present under socialism: 'the laws of economic development, as in the case of natural science, are objective laws, reflecting processes of economic development which take place independently of the will of man'.⁴⁶ This analysis was adopted by Cuban supporters of the AFS to validate dependence on capitalist categories in their economic management system. Guevara used quotations from Lenin about the New Economic Policy (NEP) introduced in the USSR in 1921 and from the Soviet *Manual of Political Economy* to counter this position and oppose the utilisation of capitalist categories in the construction of socialism:

the *Manual* states: 'Mercantile [commercial]⁴⁷ production, the law of value, and money will disappear only when the highest state of communism is achieved. But in order to bring about conditions favourable to [the] disappearance of mercantile production and circulation, it is necessary to *develop* and use the law of value as well as monetary and mercantile relationships while the communist society is being built.'

Why *develop*? We understand that the capitalist categories are retained for a time and that the length of this period cannot be predetermined, but the characteristics of the period of transition are those of a society that is throwing off its old bonds in order to move quickly into the new stage. The *tendency* should be, in our opinion, to eliminate as fast as possible the old categories, including the market, money, and, therefore, material interest – or, better, to eliminate the conditions for their existence.⁴⁸

Guevara believed that a socialist country's task was not to *use*, or even hold the law of value in check, but to define very precisely the law's sphere of operation and then make inroads into those spheres to undermine it; to work towards its abolition, not limitation. To 'eliminate the conditions for their existence' meant raising Cuba's productive capacity, creating the material abundance necessary to ignore the law of value. The challenge was to achieve this without using those same capitalist levers to production.

Reflecting on the Great Debate over two decades later, Rodríguez claimed that Guevara 'said that the law of value cannot govern economic activity [under socialism], that socialism had created the conditions for us to manipulate the law of value, to use it for the benefit of socialism'.⁴⁹ This statement was misleading because although Guevara initially believed it was possible to use the law of value under socialism, his analysis deepened to reject this view. In June 1963 Guevara questioned: 'How can one consciously use the law of value to achieve a balance in the market on the one hand, and a faithful reflection of real value on the other? This is one of the most serious problems the socialist economy faces.'⁵⁰ In October 1963, in response to Mora's claim that 'under socialism, the law of value operates through the plan',⁵¹ Guevara responded: 'We are not so sure about this ... the law of value will be reflected less and less in the plan.'⁵² In February 1964, in his first overview of the BFS, Guevara concluded:

We deny the possibility of consciously using the law of value, basing our argument on the absence of a free market that automatically expresses the contradiction between producers and consumers ... The law of value and planning are two terms linked by a contradiction and its resolution. We can therefore state that centralized planning is characteristic of the socialist society, its definition.⁵³

In June 1964 he conceded only ‘the possibility of using elements of this law for comparative purposes (cost, “profit” expressed in monetary terms)’.⁵⁴ He complained that the defenders of the AFS never explained how the law of value is supposed to be utilised through the plan.

MONEY, FINANCE AND BANKING

The difference between the proposals of Che and those who defended Carlos [Rafael Rodríguez, President of INRA] were in finances, financial mechanisms, indirect or direct. The direct ones are credit, taxes and prices ... The Auto-Financing System was linked to bank credit. If there was no bank credit it wouldn’t work ... The central difference is whether there is financial centralisation or decentralisation.

Joaquín Infante⁵⁵

Following the nationalisations, Guevara observed from the accounts of US corporations that they did not send bills and issue payments to their own subsidiaries. They developed techniques of accounting, administration and analysis that relegated money to the role of simply recording the value of what had been produced: ‘money of account’. Guevara adopted this approach in the BFS.⁵⁶

Under our system, [money] functions only as a means of measurement, as a price reflection of enterprise performance that is analyzed by central administration bodies so as to be able to control such performance. Under economic calculus [AFS], money serves not only this purpose but also acts as a means of payment, an indirect instrument of control, because without funds the production unit could not operate. Under such circumstances, the production unit’s relations with the bank are similar to those of a private producer in the capitalist system who must exhaustively explain plans and prove solvency to his bank ... Consequently, because of the way in which money is used, our [BFS] enterprises have no funds of their own. There are separate bank accounts for withdrawals and deposits. The enterprise may withdraw funds in accordance with the plan from the general expense account and the special wages account. But all deposits come automatically under State control.⁵⁷

Money of account was necessary to ensure the plan functioned as the determinant of production and investment. It strengthened the apparatus of administrative control, which stressed accounting, supervision and inventory control.⁵⁸ The financial autonomy granted to enterprises under the AFS gave them responsibility for the management of their own funds and investments and relied on capitalist categories such as ‘profit’. Consequently the two systems had different functions for money, finance and banking.

As President of the NBC from 1963, Marcelo Fernández Font was an advocate of the AFS. He envisaged the bank as the key regulator of all economic activity,

arguing that the bank should pursue ‘control by the peso’ of enterprises. He quoted Lenin: ‘*Without big banks socialism would be impossible ... A single State Bank, the biggest of the big ... will constitute as much as nine-tenths of the socialist apparatus.*’⁵⁹ In response, Guevara pointed out that money reflects the relations of production and cannot exist without a society based on commodity production: ‘We may also say that a bank cannot exist without money and, therefore, that bank’s existence is contingent upon mercantile relationships of production, whatever high form they may assume.’⁶⁰ Such relations of production would gradually disappear as the development of the productive forces and socialist consciousness created the conditions to undermine the law of value. This did not detract from Lenin’s formula about the socialist apparatus, however, according to Guevara: ‘The centralization that Marcelo seeks can be obtained by making the Treasury Ministry the supreme “accounting and control” apparatus of the entire State.’⁶¹

The Treasury minister, Luis Álvarez Rom, was an ally of Guevara who defended the BFS. Inevitably, the argument about the role of these two financial institutions became a partisan debate about the opposing economic management systems. Nonetheless, Guevara’s point is entirely consistent with views on giving qualitatively new functions to institutions under socialism.

BFS enterprises did not control their own finances. They could not get bank credit. Investment plans were submitted to MININD’s Vice Ministry of the Economy for analysis and finances issued from the ministry’s budget account. AFS enterprises, on the other hand, could obtain bank credit, although they were prohibited from providing credit to each other. Font argued that ‘credit is a typical banking function that does not disappear during the building of socialism. Rather it serves as a flexible means for helping to assure the proportional and harmonious development of the economy, the fulfilment of the plans.’⁶² Guevara opposed this argument with an extensive quotation from Marx:

it should always be borne in mind that, in the first place, money – in the form of precious metal – remains the foundation from which the credit system, by its very nature, can *never* detach itself. Secondly, that the credit system presupposes the monopoly of social means of production by private persons (in the form of capital and landed property), that it is itself, on the one hand, *an immanent form of the capitalist mode of production*, and on the other, a driving force in its development to its highest and ultimate form ... Finally, there is no doubt that the credit system will serve as a powerful lever during the transition from the capitalist mode of production to the mode of production of associates of labor ... [However] *[a]s soon as the means of production cease being transformed into capital (which also includes the abolition of private property in land), credit as such no longer has any meaning.*⁶³

Font disputed the claim by proponents of the BFS that bank credit is not used in their system. According to him, from 1961 to 1963, MININD enterprises failed to reach their planned net income and therefore did not substantially contribute to the state budget which was in deficit as a result. According to Font, this was equivalent to the bank automatically granting credits equal to the deficits, because any time that the bank provides funds that have not yet been received it is an indirect credit: 'In summary, bank credit, as an economic category within the State sector of the economy, does not disappear. It has only been disguised. But in the process it has lost its relationship to production and circulation, and its possibilities for economic control have diminished in promise.'⁶⁴ Guevara dismissed this claim outright:

This extends fiction beyond the usual limits. To compare bank credit with the public treasury reveals a mentality that almost confirms Marx's words: 'It was not enough that the bank gave with one hand and took back more with the other; it remained, even while receiving, the eternal creditor of the nation down to the last shilling advanced.' This is not to mention that the bank, as separate from the State, possesses *nothing*, despite the fictitious patrimony granted it by law.⁶⁵

The socialist state is the owner of the bank and its revenue, the factories it provides funds for, and the goods they produce. Guevara insisted, therefore, that there was no scope for credit, which is a function of private ownership and commodity exchange under the law of value.

If there was no place for credit under socialism, there was less so for interest. Guevara cited Marx to attack the NBC for charging interest to state enterprises for bank credit: 'The relations of capital assume their most externalized and most fetish-like form in interest-bearing capital.'⁶⁶ In response to Font's argument that 'Bank credit ... always earns an interest, which is the bank's principal source of revenue',⁶⁷ Guevara replied: 'If this situation is currently valid – and since interest is not technically an enterprise cost factor but a deduction of the worker's surplus labor for the society that should constitute a national budget receipt – is not interest in fact used to finance the operating expenses of the banking apparatus?'⁶⁸ Under socialism, this deduction should only be used to cover the cost of the bank administration, not as a source of revenue for the bank, as under capitalism.

When Font declared that the NBC intended to 'decentralize investment control by taking it to the agency level ... we will be able to sway investment towards building the foundations for large-scale agricultural production and socialist industrialization',⁶⁹ Guevara accused Font of becoming involved

in the formal and fictitious aspects of the matter, or what is the same thing, in the fetishism that conceals the true relations of production. This function would only

exist if the bank financed investment using its own resources, which, of course, would be absurd in a socialist economy. What the bank does is to allocate the resources of the national budget in the amounts established by the investment plan.⁷⁰

Under the BFS, said Guevara there is no reason for the bank to become involved in investment decisions, which are political and economic issues for JUCEPLAN. Given that the Treasury was responsible for the state budget, it should also exercise financial control over investments: 'This is the only place where surplus product ought to accrue if it is to be effectively employed.'⁷¹ By 'effectively employed', Guevara meant in relation to the national development strategy as opposed to accumulation by enterprises pursuing private interests.

In the AFS there were financial payments for goods transferred between state enterprises. In addition, surplus means of production could be sold by one workplace to another, providing revenue which could be used to meet financial plans, pay back loans, fund 'decentralised' investments not included in the national plan, or finance material incentive schemes for workers. Under the BFS, however, there were no financial relations between production units or Consolidated Enterprises. Produce passed on from one workplace to another was recorded as a 'delivery of products' rather than a commodity sale or purchase. Consistent with Marx's premise that commodity exchange involves property exchange, Guevara stated that in exchange between state-owned production units there was no transference of ownership. For accounting purposes only, the 'delivery of products' was accorded a 'price' and relevant adjustments were made in enterprise accounts held in the Treasury. Rather than being subject to market forces, control of goods deliveries was maintained through production contracts which regulated quality as well as quantity and punctuality. When failures occurred, administrative rather than financial sanctions were applied. Surplus means of production could not be sold to other enterprises, but were redistributed according to arrangements made by the Committees for Local Industry and approved by Consolidated Enterprise management if they were to be permanent.⁷² Inventories were updated to reflect these transfers.

Everyone agreed that lowering production costs was the key to increasing labour productivity and raising efficiency. However, under the AFS this was attained via the profit motive expressed through market forces, while under the BFS the focus was on technological and organisational innovations, moral incentives and raising skills levels.

Guevara aimed 'to develop an entire system of cost accounting that would systematically reward and punish success and failure in efforts to lower costs ... However analyzed, everything is reduced to a common denominator: *increasing labor productivity*. This is essential for building both socialism

and communism.⁷³ Cost controls meant focusing on technological changes, avoiding waste, reducing power and fuel consumption, raising labour productivity and improving the maintenance of equipment. With administration concentrating on planning and technological development, cost control would be converted into a mechanical operation, utilising mathematical analysis to regulate the economy and achieve the best allocation of resources between consumption and capital accumulation, as well as among the various branches of production.⁷⁴

Guevara argued that while general defects in planning – the result of organisational problems, lack of experience and dependency on unstable foreign markets – obstructed cost control in contemporary Cuba, ‘this should not worry us so much as our inability to understand such a phenomenon as soon as it arises’.⁷⁵ The ability to monitor the cost of production in real time would give enterprise directors more control: ‘We must continually upgrade economic performance, systemize inventory controls, and analyse in detail all the above economic indicators.’⁷⁶ Incentives should be applied to encourage work collectives to lower costs. MININD was running pilot projects in several factories to study systems of collective social incentives to lower costs.⁷⁷

In defence of the AFS, Font argued that while cost control was useful, it was an *a posteriori* control which could not substitute for the enterprise’s self-control ‘by the peso’ in the AFS: ‘premised on the enterprise’s obligation to cover costs with receipts and on making use of the material interest of the enterprise’s workers as a group’, backed up by the consumer and the bank’s financial control via the peso.⁷⁸ This model reflected the market competition of capitalism. Miguel Cossio, director of Farming at JUCEPLAN and supporter of the BFS, warned against using the profit motive as the key motivator, as under capitalism:

Profit, savings, or surplus, it is a dialectical function of expanded reproduction, and as such is conditioned simultaneously by the kind of reproduction – capitalist or socialist. In the first case it will become ‘production for productions sake’, and in the second, a *means* for satisfying society’s growing needs. In the first case, it will be an OBJECTIVE of itself, and the second, an INSTRUMENT subordinated to the collective interest. Thus an enterprise under socialism *may or may not yield a profit* without serious effect on the society, because the enterprise operates in benefit of the society whether or not it yields a profit.⁷⁹

Cossio, who supported the BFS, concluded that improvements in terms of profits would only be achieved on a national scale with a growth in production and decreasing costs.

If the operation of the law of value had been undermined, as Guevara claimed: ‘How can prices be made to coincide with value?’⁸⁰ The revolutionary

government had frozen prices, introduced rationing, benefited from export sales to the Soviet bloc above world market prices and prioritised social justice goals, all of which undermined the market mechanism through which price is determined under capitalism. How could demand and supply be balanced without giving free reign to the law of value? ‘Che arrived at a contradiction’, explained González with 40 years’ hindsight: ‘How do you create prices when there is no market? ... Che realised how complex this theme was and he did not want to make conclusive formulations. He made suggestions, but they were not conclusive points.’⁸¹

In response to claims that under the AFS prices were set in relation to the law of value, Guevara asked: ‘Which meaning of the law?’ His point was that socially necessary labour time, a concept intrinsic to the law of value, is an historical and global construct: ‘Continued technological progress, a result of competition in the capitalist world, reduces necessary labor expenditure and thereby lowers product value. A closed society can ignore such changes for a time, but it must always return to these international relationships in order to compare product values.’⁸² Prices could be internally determined, but they could not be claimed to reflect the operation of the law of value unless international production standards were applied. Indeed, Guevara believed such a comparison was essential: ‘the domestic price structure must remain tied to the price structure of the foreign market’.⁸³ He warned against the dangers of a closed economy pricing structure particularly given Cuba’s dependence on foreign trade.

Guevara first made suggestions for a pricing structure in June 1963.⁸⁴ In February 1964 he returned to the theme, proposing price indices based on the following principles:

1. Raw material imports with fixed and stable prices based on average international market price (plus a few points to cover the cost of transportation and the facilities of the Foreign Trade Ministry).
2. Cuban raw materials priced on the basis of real production costs in terms of money (add planned labour costs plus depreciation costs). This would be the price of products supplied by one domestic enterprise to another, or to the Ministry of Internal Commerce.⁸⁵

These prices would be constantly adjusted by indices reflecting commodity prices on the world market. BFS enterprises would operate on the basis of planned costs and make no profit of their own. All profits would go to the Ministry of Domestic Trade. The indices would show how efficient Cuban production is: ‘The people would not suffer at all as a result of all these changes, since the prices of the commodities they buy are independently

established with an eye to demand and need for each product.⁸⁶ Decisions on pricing and trade could diverge from the mathematical optimum for political or strategic reasons:

but we would always have a mirror before us by which to compare our work with what is actually happening in the rest of the world. Prices will always be viewed with an eye to world-market levels. These will fluctuate in some years in response to technological advances and will change as the socialist market and the international division of labour gain pre-eminence, once a world socialist price system more logical than the one now used is achieved.⁸⁷

Guevara argued that the conditions of monopoly capitalism from which Cuban socialism was emerging were technically and administratively more advanced than those in Russia in the 1920s. The challenge was to utilise these corporate efficiencies whilst removing the blind motive of profit, the operation of the law of value, and placing them within a different framework – socialism. The debate about the role of money, finance and banking was at the heart of determining how to confront this challenge. Differences with the NBC were not overcome during Guevara's time as a government minister. However, some of his ideas were implemented within MININD: money as account and the abolition of commercial relations between enterprises and of other capitalist levers.

CONCIOUSNESS AND INCENTIVES

A socialist economy without communist moral values does not interest me. We fight poverty but we also fight alienation. One of the fundamental aims of Marxism is to eliminate material interest, the factor of 'individual self-interest' and profit from man's psychological motivations. Marx was concerned with both economic facts and their reflection in the mind, which he called a 'fact of consciousness.' If communism neglects facts of consciousness, it can serve as a method of distribution but it will no longer express revolutionary moral values.

Che Guevara⁸⁸

The debate about the use of incentives to increase efficiency and productivity and develop a socialist consciousness was integrally linked to the discussion about the law of value and capitalist categories in the transition to socialism and communism. Guevara's emphasis on moral incentives and collective consciousness has been caricatured as idealist by those who fail to understand this link.⁸⁹ To move away from capitalist laws of motion, socialist society has to distribute the social product in a way which does not require distribution on the basis of equal exchange in terms of labour time. The absence of the law of value in many areas of economic life presents the challenge of how to compensate workers for their labour power; how to increase productivity; how

to overcome the dichotomy between mental and physical labour; and how to reach a healthy balance between investment in the means of production and in the means of consumption. For Guevara these questions had to be resolved by the conscious action of the workers whose objective was to construct socialist society. Moral incentives were a tool to create this consciousness and a new concept of work as a social duty. Cuban sociologist Fernando Hernández Heredia explains that '*conciencia* is the fundamental way in which the interrelation of humans and the environment is expressed: conscious action, consciousness of the ends and domination of the organised subjective factor'.⁹⁰ For Guevara, consciousness was the means to counter the worst aspects of capitalism inherited by socialism. It was a real and growing force which reproduced itself with efficient revolutionary work: 'Che insisted on the need and the urgency of finding and applying the power of consciousness via which means a development in the productive forces was assured.'⁹¹

The experience of mass mobilisation during the revolutionary struggle and popular participation in the first years of the Revolution influenced Guevara's view of the dialectical relationship between objective and subjective conditions driving revolution, social transformation and economic progress.⁹² Guevara believed that the conscious mobilisation of the masses could become an objective factor, even in the economic sphere. During the Bay of Pigs invasion by US-trained exiles in April 1961 and the Cuban Missile Crisis of October 1962, overtime work, voluntary labour, innovations, production and productivity increased, while bureaucracy and absenteeism decreased – despite many workers being mobilised for military defence. Guevara observed that 'in moments of extreme danger it is easy to activate moral incentives: To maintain their effectiveness, it is necessary to develop a consciousness in which values acquire new categories.'⁹³

Guevara's ideas were based on Marx's analysis of the impact of the mode of production on human consciousness and social relations. Marx described the sociological or psychological manifestation of the capitalist mode of production as 'alienation and antagonism'. Communism proposes the opposite – man as a fully developed social and collective being. Guevara quoted Marx 'the philosopher' who stressed the problems of man's liberation as a social being:

Communism as the positive transcendence of private property, as human self-estrangement, and therefore, as the real appropriation of the human essence by and for man; communism, therefore, as the complete return of man to himself as a social (i.e. human) being – a return become *conscious*, and accomplished within the entire wealth of previous development. This communism, as fully developed naturalism, equals humanism, and as fully developed humanism equals naturalism;

it is the genuine resolution of the conflict between man and nature and between man and man – the true resolution of the strife between existence and essence, between objectification and self-confirmation, between freedom and necessity, between the individual and the species. Communism is the riddle of history solved, and it is conscious that it is the solution.⁹⁴

For Guevara, the obstacle to ‘fully developed humanism’ under communism was precisely the commodification of labour under the capitalist mode of production; a function of the law of value. During the socialist transition to communism, therefore, social relations must change, labour must cease to be a commodity and man must develop a social or collective attitude towards the production process:

In order for it to develop in culture, work must acquire a new condition; man as a commodity ceases to exist, and a system is established that grants a quota for the fulfilment of social duty ... We are doing everything possible to give work this new category of social duty and to join it to the development of technology, on the one hand, which will provide the conditions for greater freedom, and to voluntary work on the other, based on the Marxist concept that man truly achieves his full human condition when he produces without being compelled by the physical necessity of selling himself as a commodity.⁹⁵

Guevara believed that the use of capitalist mechanisms in the production process in socialist Cuba risked reproducing capitalist social relations and a capitalist consciousness, despite state planning and state ownership of the means of production:

Pursuing the chimera of achieving socialism with the aid of the blunted weapons left to us by capitalism (the commodity as the economic cell, profitability, and individual material interest as levers, etc.) it is possible to come to a blind alley ... Meanwhile, the adapted economic base has undermined the development of consciousness.⁹⁶

Proponents of the AFS believed that economic rationality would automatically lead to social rationality. Guevara disagreed. He argued that socialism must develop an economic management system which found a harmony between the two goals; production and consciousness must be fostered in parallel: ‘To build communism, a new man must be created simultaneously with the material base.’⁹⁷

Given the link between the law of value, labour productivity and incentives to production, it is no surprise that opponents in the debate on the use of capitalist categories also disagreed about incentives. The question of whether the law of value, which predates capitalism, necessarily leads to the development of

capitalist social relations is vital. Against the view of Stalin and the pro-Soviets in Cuba, Guevara believed that potentially it does. Therefore, undermining the law of value is essential to resolving the conflict between man and nature which Marx wrote about. Rather than believing that the law of value and the way people are conditioned to its functioning could be undermined only with an abundance of material wealth as some proponents of the AFS claimed, Guevara believed that moral incentives should be developed to undermine the law of value during the process of development. In theory, all the protagonists in the Great Debate agreed with the need to gradually replace material with moral incentives. The fundamental difference was the pace of this development.

With 20 years' hindsight, Rodríguez, Guevara's chief opponent in the socialist political economy debate, said that

in the conception of incentives I had very few differences with Che, I insist, very few differences. Our permanent debate was, above all, a debate about proportions ... to what extent and how you could reduce material incentives to a minimum; the role of education in this. There, in the rhythm of acceleration, is where our differences were.⁹⁸

Both sides of the Great Debate agreed that moral incentives reflect and produce socialist consciousness, and that material incentives are necessary in conditions of scarcity and underdevelopment. For example, Joaquín Infante Ugarte, a proponent of the AFS and director of Prices and Finances in INRA, stated:

the enterprise must employ moral and material incentives in appropriate proportions according to the inherent value of the incentive at each point on the road to communism. As we move toward communism, moral incentives should increase at the expense of material incentives. But the latter do not completely disappear during the building of socialism and communism and, properly used, are an inducement to improve quality, increase productivity, and expand output.⁹⁹

However, Infante concluded his article with a quote from Khrushchev: 'We must proceed down the path of material incentives with energy and boldness, starting with quality and quantity of production.'¹⁰⁰

Guevara recognised that the underdevelopment of the productive forces and the fact that consciousness of the Cuban people had been conditioned by capitalism meant that there was an objective need to offer them material incentives. But he opposed their use as the primary instrument of motivation, because they would become an economic category in their own right and impose individualist, competitive logic on the social relations of production: 'this kind of device becomes a category *per se* and then imposes its power over

man's relationships ... "Consumer goods" – this is the slogan and great molder of conscience for the proponents of the other system. In our mind, however, direct material incentives and consciousness are contradictory terms."¹⁰¹ He concluded with his most succinct exposition on the theme:

If material incentives are in contradiction to the development of consciousness, but on the other hand, are a great force for obtaining production gains, should it be understood that preferential attention to the development of consciousness retards production? In comparative terms, it is possible within a given period, although no one has made the relevant calculations. We maintain that the development of consciousness does more for the development of production in a relatively short time than material incentives do. *We take this stance because our society's development is generally projected to lead to communism.* This presupposes that work will cease to be a painful necessity and become an agreeable imperative. Such a statement is loaded with subjectivism and requires sanction in the experience we are gaining. If in the course of experience it proves to seriously block the development of the productive forces, then the decision must be made to act quickly in order to get back on familiar paths.¹⁰²

The familiar path was the AFS with its use of capitalist categories. The italicised sentence above is vital because it expressly states the objective, and defines the paradigm within which Guevara's conceptions of consciousness and incentives should be discussed.¹⁰³

CONCLUSION

Since the 1920s, theoretical debates in socialist countries have had a direct and serious impact upon the development strategies and policies pursued. Such was the case with the Great Debate of 1963–65 which added a Cuban contribution to the field of socialist political economy. Aside from the two foreign participants, the protagonists in Cuba were involved in a daily search for administrative and technological mechanisms to organise and stimulate the economy whilst maintaining the enthusiasm and support of the masses. For Guevara, the essential challenge in the period of socialist transition was to undermine the law of value. The law, subtle yet domineering, had repercussions which were economic and psychological, manifested in individuals' perception of their role in society. Guevara's insistence on the importance of undermining the law of value reflects his understanding of how profound and traumatic the rupture of transition from capitalism to communism would be.

Guevara was not the first, nor alone, in criticising Soviet political economy for ignoring this essential challenge and warning against the relegation of the subjective factor in socialist construction; the importance of consciousness,

ideological and political identification with the revolutionary process. Guevara's contribution, however, was qualitatively different because it bridged two oppositional schools of Marxism. On one side were Soviet theorists, or what Ernst Nolte called the 'state' Marxists from the socialist countries, 'lacking critical distance toward their own state and government'; on the other hand were their critics, western or 'free' Marxists, who enjoyed 'the most radical and total form of critical distance'.¹⁰⁴ Guevara's conflict with the Soviet system seemingly placed him in the theoretical camp of the western critics. But his approach had no such critical distance because, unlike the 'free' Marxists, Guevara's analysis had serious practical consequences and was an integral part of the Cuban state's commitment to building socialism.

As Marx's dictum goes, men make history, but not in conditions of their own choosing.¹⁰⁵ Indeed, Guevara rejected the idea of theory being formulated in a vacuum.¹⁰⁶ He reportedly once said to Polish journalist, author and critical supporter of the Cuban Revolution, K. S. Karol:

So you would like us to turn Cuba into a sort of seminar for intellectuals, a Parisian cafe where people can sit down and rave about the latest literary hits. But what kind of country do you think ours really is? Cuba is in the midst of a revolution, besieged by US Marines; she must see to her defenses and build her future. It is not for fun that we have decided to rush our children from secondary schools to high schools and from high schools to universities. It is because we have to act quickly and because we have no choice in the matter ... In very quick succession, we have been taught the meaning of economic blockade, subversion, sabotage, and psychological warfare.¹⁰⁷

This explains the apparent contradiction of Guevara, both criticising the USSR and responding angrily to Karol's complaint about the Cubans using Soviet bloc manuals. 'Have you got any others you can recommend?' Guevara demanded, and he 'spoke scathingly of "liberals" who wanted the Revolution to remain ideologically neutral, and to give everyone perfect freedom to choose between a host of social philosophies and doctrines'.¹⁰⁸ Unlike 'free' Marxists, whose criticism of Soviet socialism took the form of an intellectual exercise, Guevara was in a position to concretise his analysis by creating an alternative economic management system which attempted to undermine the law of value and place man at the centre of development. It is one thing to criticise the lack of 'humanity' in existing socialism, but another to come up with a policy which actually develops socialist consciousness. Guevara told his comrades: 'It is easy to speak, easy to criticise ... what is difficult is to act, apply oneself, to resolve, coordinate wills and interests and find the best solutions. The problem might be enormous, but even greater is our decision to find a solution.'¹⁰⁹

Guevara complained that instead of devising policies consistent with Marx's analysis, Soviet theorists had adapted theory to accommodate their empirical reality.¹¹⁰ He attempted to prove that such compromising pragmatism was not necessary; that it was possible to construct a socialist system which could develop the productive forces and create socialist consciousness simultaneously, thus preparing society for a transition to communism. His vision of socialism was additionally influenced by the traditions of Latin American struggles for national liberation with social and economic justice. As development theorist Ken Cole stated: 'we find in Che Guevara an unequalled integration of [José] Martí's insights and Marx's theory, into a revolutionary practice by which people might liberate themselves by becoming aware of their social potentials'.¹¹¹

Indeed, Guevara enjoyed a rare opportunity to deepen his theoretical analysis with the experience of applying his ideas in revolutionary Cuba. It is this exciting and dynamic process which is examined in the following chapters. Providing the first systematic record of Guevara's work as Minister of Industries, they detail the practical policies and structures developed to concretise his theory, outlining the problems he aimed to solve and illustrating how these measures were directly linked to his theoretical conceptions – how they aimed to undermine the operation of the law of value in Cuba's transition to socialism.

4

Education, Training and Salaries

‘To be educated is to be free’ – the words of Cuba’s hero of national independence, José Martí, were echoed as a battle cry in the struggle against dictatorship in 1950s Cuba. The Revolutionary Proclamation of the 26 July Movement (M26J) declared: ‘We believe that true democracy can be attained only with citizens who are free, equal, educated, and have dignified and productive jobs.’ The Proclamation was intended to coincide with both the urban uprising in Santiago de Cuba and the arrival of the Granma boat carrying the nascent Rebel Army in November 1956. It was to announce the formation of a revolutionary government, headed by Fidel Castro, whose education policy promised literacy campaigns, adult education, subsidised libraries, museums and laboratories for scientific research, theatres, films, music, dance and print shops.¹ Che Guevara shared the view that education was part of the armoury of revolution and that educating the poor was a precondition for winning the struggle against imperialist domination, preparing them to seize power themselves. For Guevara, education was synonymous with culture – the assimilation of knowledge from art to science – and culture was to be part of what distinguished the ‘new man’ of socialism/communism from the proletariat under capitalism who, in Marx’s words: ‘live only so long as they find work, and who find work only so long as their labour increases capital’.² Education was a constant and dynamic process in which the revolutionary had to engage daily as a means of self-improvement and, through that, social development.

Historian Antoni Kapcia noted that ‘any analysis of education in Cuba since 1959 has to recognise that education is politics, that politics means revolution and that revolution has been largely a search for a new national identity’.³ For Guevara that new identity was *Cuba Socialista*, for which education acquired three functions in economic development: first, education as culture, basic literacy classes for the Rebel Army during the war and in La Cabaña; second, political education, teaching Cubans about imperialism, class struggle, the revolutionary process, socialist construction and work as

a collective duty; and third, education for production, learning accountancy, technical training, specialisation, cultivating the capacity for abstract thought necessary to manage complex industries. The asthmatic Argentinian set out to create the apparatus necessary to concretise these aspirations within the Ministry of Industries (MININD) as part of his Budgetary Finance System (BFS) of economic management. However, the building blocks from which *Cuba Socialista* was to be constructed were inherited from a colonised nation, rife with class and racial oppression. Liberating Cubans through education, in the spirit of Martí's slogan, meant creating entirely new institutions adequate for the new social relations and balance of power. Education for production meant addressing a complex series of issues about training, the role of trade unions, inflation and the historic attachment to salaries in a fully monetarised economy. Guevara both promoted the concept of permanent improvement and fostered the concept of work as a social duty: breaking the link between work and remuneration and undermining the operation of the law of value.

Guevara grew up with an insatiable appetite for knowledge and a proactive approach to learning. During his childhood and youth, bouts of asthma confined him to bed where he read widely and prolifically. At 17 years of age, he developed a rigorous routine of listing and commenting on his personal reading material in notebooks and then, once completed, he added indexes. These indexes illustrate the breadth of Guevara's cultural interests – this reading was additional to his school and university education. After January 1959, his reading became more focused and broader in the search for solutions. He studied Marxist classics and socialist political economy, but also studied management theory from the corporate capitalist world. He learnt Cuban history and devoured the works of Cubans, including José Martí and the poet Nicolás Guillén, and political and military history from around the world. He studied maths from 1959 and, when his teacher Salvador Villasca declared there was nothing more he could teach him, Guevara began a course of advanced maths set theory, with Dr Hugo Pérez Rojas.⁴ He had lessons with specialist accountant Harold Anderson, who was director of Organisation in MININD, and in 1964 took a course, taught by a professor Martí from the Faculty of Physics at Havana University, in probability and theories of information, an area understood by a handful of people in Cuba at that time.⁵

One morning he complained to members of MININD's Management Council: 'you are dealing with so many problems that you are not thinking about the future, you are not even thinking about the present. Computing is a reality in the world and you have to start learning about it.'⁶ He handed them each a copy of a book about linear programming, a mathematical technique used to predict optimal conditions for production, and told them to study the first chapter for a class the following week. Secretary of the Management

Council Juan Valdés Gravalosa recalled: 'next Monday, we were waiting for a teacher and Che was at the drawing board; it was Che who gave us classes!'⁷ These studies were in addition to managing the largest ministry in Cuba and on top of his numerous political and military responsibilities of state. A look at Guevara's Monday schedule from this time demonstrates what this meant in practical terms: 7am, teaching linear programming; 8am, MININD Management Council meeting; 2pm, annual reports for each Consolidated Enterprise (EC) discussed; 9pm, higher maths class.

Guevara studied Swahili in the Congo and Quechua in Bolivia, making classes compulsory for the Cuban troops under his command. He taught them French and maths as optional extras.⁸ He asked Vilaseca to send his linear programming book out to Africa and gave Harry Villegas Tamayo a list of 300 books to buy in Argentina and Brazil on the way to Bolivia. According to Villegas, who was one of three Cuban soldiers in Bolivia to survive and escape when Guevara himself was killed, 'he wanted to write about philosophy' whilst in the mountains.⁹ Guevara had already written his critical notes on the Soviet *Manual of Political Economy*¹⁰ while in Prague after the failed military campaign in the Congo.

EXODUS OF PROFESSIONALS

The education drive was not just a principle; it was also a desperate necessity in response to the crisis resulting from the exodus of professionals and the lack of revolutionary substitutes. The 1953 census recorded that 31 per cent of Cubans over six years old had no schooling; another 29.4 per cent had three years' schooling or less. Effectively, 60 per cent of the population lacked education. Some 3.5 per cent had received high-school education and just over 1 per cent had university education. The illiteracy rate of the rural population over ten years old was 41.7 per cent.¹¹ Cuba had a small urban professional elite. Most industry was owned by foreign companies, predominantly from the US, which tended to staff their facilities with their own nationals; numerous enterprises in Cuba were operated by US managers and technicians. Many of the Cubans in managerial positions had been trained in the US and used their connections to resettle there shortly after the Revolution. Of the 2,000 engineers in Cuba 1958, only 700 (35 per cent) remained after the nationalisations of 1961. In the petroleum industry, 75 per cent of engineers and almost all the managers left within one year of nationalisation. Fidel Castro described the early days: 'when there was nothing, no experience, no cadre, no engineers, no economists, no technicians hardly; when we were left almost without doctors, because 3,000 of them left out of the 6,000 that had been in the country'.¹²

Professionals left because they recognised that as the Revolution radicalised it was not favouring their interests, as individuals or as a class. Guevara, however, encouraged middle-class professionals and skilled workers to stay, confident that their integration into the revolutionary process would help reconcile their individual interests with those of society. He talked openly in Leninist terms about the historical position of technicians and engineers as privileged workers – the labour aristocracy – and acknowledged their general detachment from the ideological sweep of the Revolution. But he believed that as long as they were not organising as a class against the Revolution, their incorporation into production was essential and beneficial for socialist society. Even without developing ideological commitment, they could transfer technical skills to a new generation of revolutionary cadre. Miguel Figueras, director of the Perspective Plan in MININD, said the experts who stayed to work with the Revolution ‘were brilliant people and Che used their help and maintained their much higher historic salaries. This was a very smart policy of Che not to push them aside, but to engage these very intelligent people. Many of them had families that had left or they wanted to leave and Che worked with them to bring them close to the Revolution.’¹³

Guevara conceded that technicians should be better paid than less-skilled workers during socialist transition, while remuneration remained tied to labour, but they would not receive political or social privileges over other workers. He said: ‘They will be better paid because the law of demand and supply still functions, to a certain degree; and it is necessary to have technicians, to pay them better; so they carry out their tasks better.’¹⁴ On the other hand, he also believed that technicians often responded to moral incentives sometimes better than the average worker, because they relished recognition for their achievements and expertise. He lamented that technical expertise and revolutionary commitment were rarely combined, but he still aspired to have an engineer in every enterprise. This would be achieved as

old technicians begin to incorporate themselves into the Revolution, called by the sense of justice that everyone has inside, they will start to understand socialism; and new technicians, born with a different consciousness, will incorporate themselves into our enterprises. It would be ideal if in the mineral enterprise there was an engineer of the mines with 20 years’ experience, not this comrade Herbella who was a travelling salesman of I don’t know what.¹⁵

The story of how Tirso Sáenz became a vice minister to Guevara indicates, first, that the exodus of technicians was not necessarily an expression of political antagonism to the Revolution but motivated by individual self-interest; and, second, that non-political professionals could become ideologically committed

to the socialist revolution. Having trained in the US as a chemical engineer, Sáenz worked in Cuba at a subsidiary of Procter & Gamble (P&G), who, following nationalisation of the company, offered him a new job in Cincinnati, Ohio, USA. The prospects were good, so, although he had nothing against the Revolution or Castro, in October 1960 he went to the US embassy with a letter from a P&G vice president stating that he had employment in Cincinnati and requesting a visa. But the embassy staff spoke to Sáenz in what he considered a demeaning tone, demanding proof of his university degree:

I said to ‘Go to hell!’ and I left. My wife was waiting at home: ‘What happened?’ she said. ‘We are going to stay and see what happens’, I told her. The next day I had responsibility for five or six different posts, because other people had left. The blockade was already in place. There were no raw materials, nothing. I was trying to be an alchemist, producing soaps, detergents, toothpaste and shampoo out of nothing.¹⁶

In February 1961, the Ministry of Industries interviewed Sáenz in search of a ‘revolutionary engineer’ to be vice director in the petroleum industry. ‘Four months after I was at the US embassy I was considered a revolutionary engineer, because I was doing a good job, not just talking. And this was a revolutionary act. I was not working for myself and P&G any more; I was working for the Cuban people. That gave my work a new dimension.’ Sáenz got the job, which involved mediating between the technicians and the government to maintain production and prevent sabotage: a kind of political commissar. Embarrassed by his own record, however, he requested a meeting with Guevara.

I told Che my story and then he asked me ‘Do you want to leave the country?’ I said ‘No!’ ‘Do you want to work with us?’ I said ‘Yes I do.’ He said ‘OK, I think you are an honest man so let’s work. Go and work.’ And he never raised the issue again; he never referred to me as the one who wanted to leave the country.¹⁷

Every institution in Cuba, MININD included, was filled with underqualified revolutionaries ‘learning by doing’. Most importantly, they were loyal to the Revolution; their low educational level and lack of experience could be resolved, as the Cubans say, ‘*sobre la marcha*’ – on the job. Guevara said the challenge was to: ‘fill the vacancies left by the traitors and to meet our need for a skilled work force resulting from the rapid rate of our development. That is why training is the top priority of all the revolutionary government’s plans.’¹⁸ Education and training were integrally linked to production and the needs of industrialisation, binding individual improvement with economic development and the progress of the Revolution.

EDUCATIONAL DRIVE

Guevara's commitment to constant learning, and his vision of the revolutionary as social vanguard, merged in his pedagogical approach to those around him. Villegas joined Guevara's column in the Sierra Maestra at the age of 17 and fought with him in the Congo and Bolivia:

Che's book *Guerrilla Warfare* begins by stating that guerrillas are social reformers, so he said they should have the cultural level to be able to reform. He believed that regardless of the educational level we already had we had to prepare ourselves to play a role in constructing the new society. Every time there was an opening during the struggle he looked for the possibility of creating a school.¹⁹

Building schools and studying helped keep the troops occupied between scarce meals and infrequent combat. Guevara gave literacy classes and general education to his troops and local people in periods of non-combat. He studied Cuban history, war strategy, and about the Mambisi resistance to Spanish colonists, and then would teach others, reading in groups and discussing the material. Guevara even read the poetry of Pablo Neruda to the young soldiers.²⁰ Troop education was formalised in the first days of January 1959 when La Cabaña fortress in Havana was turned into Ciudad Libertad (Freedom City). He invited teachers and other university graduates, members and supporters of the M26J and the Popular Socialist Party (PSP) to provide literacy and political education for his column. María Teresa Sánchez was among them:

He emphasised the importance of the soldiers' understanding why we wanted to educate them, why we wanted to prepare them; that they were the ones who were going to complete the future tasks. Che knew that many of them would return to their homes, but at least they would return literate ... We gave classes in the morning: reading, writing, mathematics. A group of us gave them political instruction and history. I talked to them about Cuban struggles, the situation of workers, their leaders and the sugar cane. We introduced them to Marxism and discussed how the workers lived. We worked on the level they were at because we didn't want to alarm them. They were very conscious of the role they would play in the future. Those who weren't interested left the army.²¹

Once the soldiers had basic literacy, they went on to other education, training and military schools. Political scientist C. Fred Judson has detailed the education of the Rebel Army, from 1953 to 1963. In the post-1959 period of institutionalisation, he noted the importance of educational material published for military personnel, purged of Batista loyalists and reorganised

as the Revolutionary Armed Forces (FAR), in raising the political level and commitment to the radicalisation of the Revolution:

[It] was not aimed exclusively at creating anti-imperialist convictions. It was also aimed at constructing an army with a social conscience, an army prepared to carry out land reform and innumerable construction projects, an army prepared to be involved in production; an army prepared to root out corruption, an army prepared to administer a whole series of reforms ... such political education was not exclusive to the Rebel Army. The revolutionary leadership intended to educate a whole people, both to prepare it for coming struggles and, as a matter of principle, to equip the people with the skills necessary to build the society of the revolutionary vision.²²

A number of publications were produced to assist in literacy training and political education and for general interest. The vocabulary and content varied according to the degree of literacy of their readership. But all the materials emphasised the continuity of struggle, from the wars for independence to the Revolution of 1959 and from the war against Batista to the struggle to consolidate the new state. The attainment of literacy was portrayed as a blow against the old regime where ignorance had served the dictatorship: 'To read and write is a new weapon and you should care for it as you care for your rifle.'²³ Publications included: *Arma Nueva*, *Alfabetizamos*, *Venceremos* and the weekly magazine *Verde Olivo* whose readership in the army and militias was in the hundreds of thousands and which was also available to non-military readers. As head of training and education in the FAR from early 1959, Guevara regularly contributed to these publications. His introduction to the *Manual of Civic Training*, a training booklet published in January 1960 for educating soldiers, stated that it served all Cubans, not just the army.²⁴ According to Judson, the content of the *Manual*, published over a year before the declaration of socialism, was already anti-imperialist and influenced by Marxist concepts.²⁵

In January 1959, Armando Hart, a leader of the M26J urban wing, became the revolutionary government's new Minister of Education. Within 16 months the ministry had increased expenditure on education by 10 per cent, school capacity increased by 25 per cent and teaching staff by 30 per cent. In the previous 57 years since the establishment of the Republic, just one new school had been built in Havana. The new government built 37 new schools in the first year of the Revolution.²⁶ These new state education facilities were either free, or workers were paid to study, thus removing all financial barriers to entry presented by the thriving industry of private education in which around 90,000 Cubans were enrolled by 1949.²⁷ Hart described how they carried out such a massive expansion of education provision:

Five thousand classrooms for nine thousand unemployed teachers could be created just with the financial resources available in the long list of '*botellas*' [payment for absentee teachers] formerly handed out by the Ministry of Education of the old regime. When I told Fidel I was going to devote myself to creating five thousand classrooms, he pointed out that we should talk to the teachers and ask them to cut their salaries in half and thus create twice as many classrooms – ten thousand – with agreement that their salaries would then be raised gradually in a short number of years. That's what was done.²⁸

In 1960 the literacy campaign was launched and achieved its goal of eradicating basic illiteracy within one year. Over 300,000 Cubans, including 100,000 students, many in their early teens, travelled across Cuba teaching more than 700,000 people to read and write, simultaneously experiencing how the country's poorest lived, reinforcing the sense of *Cubanidad* and an understanding of the profound social change ushered in by the Revolution. Hart explained: 'Youth who were too young to participate in the struggle against the tyranny were given a no-less heroic task at the triumph of the Revolution: that of defending the country and the revolutionary program, one of whose points was the elimination of illiteracy.'²⁹ In December 1960, Schools of Revolutionary Instruction were set up to overcome the lack of cadre capable of teaching Marxist-Leninist theory and to counter 'the vice of pragmatism, that is, the tendency towards exclusively practical work, rejecting study and theory'.³⁰

MININD was set up in February 1961 with four vice ministers: Orlando Borrego, Omar Fernández, Mario Zorrilla and Gustavo Machín. Like Guevara, Fernández had a medical degree, but none of the others had university qualifications. Fernández left to be Minister of Transport and was replaced by José Manuel Castiñeiras, who also lacked a university degree.³¹ MININD's Management Council were affectionately known as the 'illustrious illiterates'. Likewise, of the nearly 40 EC directors, only three were university graduates. Few of the factory administrators had even middle-school qualifications, with the exception of those in charge of a handful of complex plants, such as petroleum refineries.

In this context, the educational drive was institutionalised in MININD to engage everyone in constant *superación* (self-improvement), from those who had just learned to write their own names to expert advisors whom Guevara urged to study new specialities. Classrooms were created in every workplace. Sáenz explained how this was possible given the exodus of professionals:

Every worker, every engineer, every man with a slightly higher level than the rest, was able to teach. Really! You had a course for everything. Everybody was studying. Workers, older people were contracted as teachers. When did this take place? Some

were practical classes, for example minimum technique, which was studied during the working day. Most classes were outside the working day. How often? Every course had its own structure and organisation. Were the classes obligatory? No, but everybody went, because it was important. You see the importance of ideological work, people felt that they needed to improve their qualifications; they even felt pride in studying.³²

José Luis Puñales was one of those who was transformed immediately from pupil to teacher. Active in the M26J Havana underground, he was a factory worker and taxi driver before 1959. After studying one year at the School of Commerce and on return from military duty at the Isle of Pines (today the Island of Youth) during the Bay of Pigs invasion, he attended the School for Political Commissars and, once graduated, he was asked to stay on and teach. The course included political economy, history and Marxist philosophy.³³

Guevara had a reputation for being most demanding of his closest *compañeros*, including his four young bodyguards. One of them, Juan Alberto Castellanos Villamar, recalled: 'One day he said to us: "Well lads, you are *compañeros* with sufficient merits for us to give you any task. In ten years you may have more merits, but if you don't study we will have to replace you with those who have knowledge. You will have to retire with a little salary." Then he gave us a teacher.'³⁴ So while Guevara was busy in his office, his young bodyguards were set to study by a revolutionary teacher from Spain, Ángel a Trueba.³⁵ Returning from his trip to the non-aligned countries in September 1959, Guevara checked the class register, and seeing that Villegas and Castellanos had skipped classes he punished them with one month's labour on a farm outside Havana. Guevara expected them to accept the discipline of *superación*, just as they had accepted the discipline of the guerrilla struggle.

From 1963, MININD's bimonthly meetings began with an exam for EC directors, to test their statistical and accounting knowledge of the work centres under their jurisdiction. Guevara criticised members of the Management Council for not participating in study circles, arguing that constant study was essential to prevent the creation of bureaucracy: 'There are several people who have a [study] circle of political economy ... others content themselves with the professional experience that they have and others simply with daily work ... this will produce a coarsening of people; bureaucratisation and standardisation, that will lead to work of bad quality and a decline, in the long term, in the effectiveness of the comrades.'³⁶ Puñales said: 'With Che you had to study continuously. Almost all of us had a commitment to get into university. That was something that he struggled hard for.'³⁷ Ángel Arcos Bergnes, who led two branches of production in MININD, said that until every director

was a university specialist in the appropriate branch, 'and had ten years of experience, it would not be sufficient' for the country to develop.³⁸

Edison Velázquez was named director of the EC of Nickel. Just 20 days after arriving at the huge and complex Nícaro nickel mining plant in eastern Cuba, Guevara visited him there to assess how he was getting on. Velázquez recalled:

Che asked me how much a ton of nickel was, and I didn't know. He shouted at me saying: 'You are an irresponsible person; you are in charge of the most important industry in the country!' He was furious. So I studied with the technicians about the factory processes, accounting and costs in the different areas. Che obliged you to study. He gave you exams.³⁹

In the bimonthly meeting of February 1964, Guevara referred to Velázquez's situation, point out that the director relied entirely on the advice of technicians because he lacked knowledge of the industry: 'Well then there is an obligation to study systematically all of the problems of nickel, in order to learn.'⁴⁰ He suggested the EC of Electricity organise a study course for other directors.

For Guevara, it was essential to study theory in the process of daily practice, the balance was essential: 'Now to invent theory totally on the basis of action is foolish ... This is not to say that we have to become philosophers, nor become great economists, but we have to have basic knowledge.'⁴¹ Intellectual work fostered the capacity for abstract thought which was necessary to administer complex factories or to manage an EC. Administrators who were exemplary in workshops often failed when faced with complex management operations because they lacked this intellectual training:

when that good worker arrives at a bigger factory, he starts to have problems, because there he has to confront problems of organisation; he cannot move this big factory with his personal example, he does not have time, it is not possible, there is not the direct contact ... a low scholarly level weakens the director's ability to work with a little abstraction. He cannot appreciate the problems that exist and this ends in catastrophe.⁴²

Administrators and directors were responsible for encouraging the mass of workers to sign up to training courses, and Guevara complained when this task was not taken seriously. He claimed that in places where training had been enthusiastically taken up, it had made a difference overnight: 'but it has not been used enough. We have to give a lot of emphasis to the existing courses, those that are being developed, and to the planning of new courses.'⁴³ Workers were informed about education and training courses in *Nuestra Industria*, one of three MININD journals.⁴⁴ As Vice Minister of Technical Development,

Tirso Sáenz's responsibilities included overseeing the training apparatus of MININD. He lamented that because he had prioritised the development of research institutes and machinery construction – also under his jurisdiction – he had failed to develop the training facilities of MININD sufficiently. 'The training task was not fulfilled properly. That is one of my self-criticisms.'⁴⁵

Nonetheless, the progress made was outstanding. People's Schools provided basic education and training for surplus workers, particularly in artisan industries. In addition, by 1964 there were courses in workers' *superación* and technical minimum at various levels, the School for Administrators, the School for Automation, the School for Mechanical Drawings, the School for Metrology, CILOs School for Administrative *Superación*, the School for Directors, a Textile School, a school for super-gifted young workers. Whenever a new plant was built, workers were either trained to operate it by the Soviets, or whoever had sold the equipment, or Cubans were sent abroad to train in the new technology. Between 1964 and 1965, close to 2,000 Cubans received training for plants under construction.⁴⁶

In 1964, problems in training were recognised in MININD's annual report, although it said they originated at the national level. That year, 94,705 ministry workers were enrolled on *superación* courses and 'technical minimum' vocational courses, of which 23,215 graduated during the year. The participation rate was higher than planned, although the graduation rate was well below target: between 49 per cent and 80 per cent down for various worker *superación* courses (13,281 graduates – with another 62,898 students), 38 per cent for 'technical minimum' (6,835 graduates – 6,438 still studying) and 64 per cent for specialist courses (3,099 graduates – 5,253 studying).⁴⁷ The low level of graduation was explained, among other things, by the absence of specialised workers and technicians to act as instructors and the 'historical' salaries of some workers which, untouched by the new salary scale, did not provide an incentive to take up training.⁴⁸

In addition to technical skills, many courses covered political economy and philosophy. Borrego, First Vice Minister of MININD, observed that by 1963 there was a basic understanding of Marxism within MININD:

We began Marxism courses in the ministry and at Consolidated Enterprise and factory levels. These were obligatory for the leaders, because political economy and Marxist philosophy were included in the administrators' courses, along with maths, chemistry, Spanish, and so on. Marxism was not obligatory for other courses – it depended on what was studied.⁴⁹

Despite relying on translations of the Soviet bloc manuals for many of these studies, Guevara constantly fought against the dogmatic interpretation

of Marxism that was prevalent in other socialist countries. Two anecdotes illustrate the point. In 1962, Borrego was being assessed for membership of the Integrated Revolutionary Organisations (ORI). It was announced that he was a suitable candidate except for committing the indiscipline of reading a Chinese bulletin, which members of the old PSP wanted to ban as Cuba was dragged into the Sino-Soviet split. Borrego recalled: 'Suddenly, Che entered the meeting and asked how everything was going. He was told that they were discussing my militancy [membership] and about the issue of the Chinese bulletin. Che said he hoped they were congratulating me for reading it, as it was the militant's duty to stay informed by reading everything.'⁵⁰ In another incident, members of the Union of Young Communists in MININD complained to Guevara about an ongoing argument with some colleagues who were Trotskyists. Guevara advised them to read Trotsky for themselves before continuing the polemic.⁵¹ However, while encouraging theoretical debate, Guevara's abiding concern was to raise the general educational level of administrators to sixth grade – the equivalent of eleven-year-olds in the British education system. In November 1961 he told the Eleventh National Workers' Congress:

When we initiated this process, in the middle of the rapid nationalisation of the means of production, we could not be selective; but that time has passed and we have seen that one cannot have less than sixth grade [to administrator a production unit]. We still have administrators – some of them very good – who have only second grade and it is incredible how, with barely a notion of how to read, write, and some simple maths, they can manage factories. But in the coming year we will be demanding another test from these comrades who demonstrate their capacity for management. Next year, all the administrators of industries should take the exam to accredit them with sixth grade schooling at least. Those comrades who don't have the education should return to school to achieve sixth grade. In this way, we will go on demanding more every time.⁵²

Little more than one year after the nationalisations and following the frantic search for administrators, MININD was in a position to stipulate that all administrators should pass sixth-grade exams. Even university graduates were expected to retake the sixth-grade exams. One EC director did not think it was necessary for him to take the exam but he was overruled by Guevara who had sat it himself. The pass mark was 70 per cent and the director got 72 per cent – only just passing.⁵³

Despite progress, Guevara continued to be concerned about the low educational level of administrators. In March 1963 he reported that the Ministry of Education had supposedly selected the best sixth-grade graduates to participate in a special course. In the final exam half of them failed: 'The level of sixth grade of our graduates is really at fourth grade', he concluded.

‘There are people who have a sixth grade certificate but they have lost the knowledge in the course of life; they took the exam 20 years ago.’⁵⁴ Several months later, 986 administrators sat an exam at the end of a course organised by the Committees for Local Industry (CILOs), 132 administrators failed and were suspended. Guevara lamented: ‘after all the insistence on reaching sixth grade and the warnings that they would be replaced, despite all this, there were still 132 incapable of passing an exam that is barely sixth grade’.⁵⁵ The pass mark was 60 per cent. Those with less than 50 per cent could no longer be administrators. Those with 50–60 per cent were sent to the School for Administrators. If they did not improve they could not be administrators. Guevara suggested that the 260 administrators who had not turned up for the exam have their salaries stopped until they sit the exam in ten days’ time, unless they could prove a legitimate excuse for their absence.⁵⁶ In October 1963, Guevara complained that directors were sending weak administrators, who had already been rejected by the School for Administrators, back there. ‘We can’t be recycling, putting them in the School and taking them out, putting them in and taking them out, playing a stupid little game. Where are the new people?’⁵⁷ Frustrated, Guevara insisted that there are workers, especially youngsters, who have leadership qualities and the minimum school qualifications for the role of administrator.⁵⁸

The School for Administrators was set up in 1960 under the Department of Industrialisation, transferred to MININD and then opened up to workers from other ministries until they established their own schools shortly afterwards. Guevara said:

Our School for Administrators is concerned with forming our new leaders of industry or improving their knowledge, always attentive that the administrator is the key cog in the machine of production. In them we search for political clarity and administrative capacity; that is, basically, awareness of the justice of our Revolution, along with basic knowledge, organisational capacity, insistence and discipline.⁵⁹

To enrol in the School students had to have achieved their sixth-grade certificates and be between 20 and 45 years old. Most were already working as administrators and were proposed by the directors of the ECs that they worked under. Given the intensity of the School – three years of normal study condensed into one year – candidates had to first pass entrance exams and psychometric tests to demonstrate they could cope.⁶⁰ Speaking to the first graduates in December 1961, Guevara announced: ‘You were enrolled in this School when we realised that the working class, with the education that it had, was going to restrict the development of the productive process if we did not

quickly give the [administrators] technical training ... you are the first result of this attempt to create technicians.'⁶¹

Guevara's bodyguard Castellanos was among those thrown in to manage a workplace in the frantic search for administrators during the nationalisations of industry. Later, as the emergency abated, he attended the School for Administrators. He recalled the experience: 'We began with numbers and we ended with algebra. In political economy we studied the USSR *Manual of Political Economy*; we had six months of philosophy, capitalist and socialist accounting, statistics, mathematics, Spanish, physics, chemistry, work norms and organisation and a little history.'⁶² The students were boarders at the school and received a monthly salary of 200 pesos, of which 25 per cent was held back until they passed. Some of the students had previously earned as little as 80 pesos monthly, but others up to 1,000 pesos. Another of Guevara's bodyguards, Villegas, also attended the School: 'To graduate you had to present a thesis about a factory; describe all its aspects from human relations to flows of production, costs, and perspectives plans. I did my thesis about beer production.'⁶³ In addition to the academic curriculum, they participated in theatre groups and had to share the domestic work.

Of the first 400 students in the School (100 came from the Ministries of Transport and Domestic Trade and 300 from MININD), 327 graduated. Guevara was disappointed: '300 individuals from a mass of workers that have passed sixth grade and have the necessary conditions to be an administrator: that is not a fabulous sum.'⁶⁴ There were already well over 1,000 production units in MININD so the number of graduates clearly fell short of MININD's needs. Guevara blamed the directors for selecting students who lacked the educational level to pass the course: 'I say to you gentleman', he said, adopting the ironic tone he used to castigate his colleagues, 'one cannot study at the School of Administrators with second grade ... Sending a man with second grade there will destroy him ... we cannot use people in this inhumane way.'⁶⁵ He admitted having himself sent under-qualified youngsters to the School, 'and, after receiving a deficient grade those lads are in tears, and they have come to see me in desperation'.⁶⁶ Insisting that there were plenty of qualified workers who had not been selected for the School, he warned EC directors not to use the School as a means of getting rid of inadequate administrators: 'The School is not brilliant at all; there are dozens of organisational defects. But it is very easy for us to resolve these problems if you send the best people and don't resolve your own problems by sending people to the School for Administrators.'⁶⁷ Graduates were supposed to return to the workplaces from which they had enrolled. Shortly afterwards, a similar school was set up for the *superación* of EC directors with the same objectives of deepening their knowledge of management and economics, but at a higher level.⁶⁸

Another intensive school was set up for people described by MININD's director of psychology, Dr Graciela del Cueto, as 'super-gifted'. They did not have sixth-grade qualifications but demonstrated a high intellectual ability. The aim was to fast-track them into university in three years. Guevara highlighted the directors' responsibility to select candidates for this school: 'go pull out these people and give them a painstaking education; prepare them as cadre'.⁶⁹ By February 1964, the EC of Electrics required sixth-grade certificates from all its workers, not just administrators.⁷⁰ The workers' general educational standards were rising, but Guevara's expectations rose with them. He aspired to create study circles with experts for every branch of industry.⁷¹

WORK AS A SOCIAL DUTY

Consistent with his criticisms of the socialist bloc's dependence on capitalist categories, a key challenge facing Guevara was in devising policies to decommodify labour power. He attempted to introduce and institutionalise a new concept of work – social work, breaking the link between labour and remuneration within MININD to undermine the law of value. Voluntary labour was the ultimate means to achieve this, but other steps towards this goal negated traditional preoccupations with salary rates, limited payments for work (time or output) over the norm, paid the unemployed to be educated and created a salary scale which linked qualifications to pay rates and promotions. These measures were designed to promote the notion of a social wage and work as a social duty.⁷²

Rejecting his ministerial salary, Guevara claimed only the 190 pesos paid monthly to soldiers in FAR. MININD cadre followed suit. In 1961, Puñales became the administrator of El Modelo brewery, taken from the Bacardi Corporation during the nationalisations. Brewery workers had been privileged members of the working class.

The first name that appeared on the payroll was mine, followed by the Master Brewer. My salary was 190 pesos, like all the soldiers of the army, and my subordinate's 1,000 pesos. The other workers earned 700–900 pesos. For my generation money was not the most important thing. This showed how the workers' mentality was transformed with their incorporation into voluntary labour.⁷³

Guevara defined the work 'norm' as 'the average amount of labour that creates a product in a certain time, given average skill and under the specific conditions of equipment utilization. It is the contribution of a set amount of labour to society by one of its members. It is the fulfilment of social duty'.⁷⁴ In ministries operating under the Auto-Financing System (AFS) a worker

exceeding the norm by 50 per cent would receive a 50 per cent increase in remuneration. Under the BFS regulations, workers received some additional payment for production over the norm, as material incentives were considered to be a necessary evil, but not in direct proportion to the amount surpassed. Citing Marx's *Critique of the Gotha Programme*, Guevara argued that part of the surplus produced by the worker goes to cover investment in social production – new capital goods, expanding production and towards insurance reserves – while another part goes on social consumption – administrative costs, social welfare provision and provision for those unable to work. Workers' bonus payment could not exceed the basic rate of the next level up on the salary scale. To reach this level workers had to improve their skills and qualifications: 'Our system of norms has the merit of establishing compulsory professional training as a condition for promotion to higher job categories.'⁷⁵ In place of receiving a bonus in proportion to surplus output, workers were rewarded by their capacity to achieve more capacity. Guevara explained:

For example, going to a school where your salary is paid and where you come out with a new qualification. On returning to the factory this new qualification is automatically converted into an increase in salary. That means that it is a material incentive; the only thing is that the material incentive is not derived directly from the relationship between the work and what is received for the work.⁷⁶

This effort to break the link between work and wages was accompanied by an attempt to break the conceptual link between production and commercialisation; for example, by changing the title of the Commercial Department to Delivery Department. Guevara intended 'to separate the production, which is one thing, and the commercialisation which is another'.⁷⁷ Production was to be understood as meeting social need, not motivated by the profit motive as under capitalism.

Consequently, the unemployed were not to be regarded as a reserve army of labour whose existence served to keep wages low, but as individuals with the potential to contribute to the process of social development. Before 1959, Cuba suffered from endemic unemployment and underemployment, as highlighted by US commentator Leo Huberman:

A careful analysis of employment figures from the 1953 census showed that on an annual basis only about 75 percent of the Cuban labour force was employed ... *For Cuba, in respect to unemployment, every year was like the worst year of [the US's] worst depression.* And there was no system of unemployment insurance or unemployment relief.⁷⁸

Guevara conceded that tackling unemployment took political priority over raising productivity and efficiency. In late 1960 he described unemployment as a cancer in the economy which had to be destroyed and announced that, despite the importance of heavy industry, the Department of Industrialisation's policy was to develop small labour-intensive manufacturing industries to employ more workers.⁷⁹ By the end of 1961, unemployment had been eliminated as a major socioeconomic issue. Guevara told the National Workers' Congress:

the revolutionary government has freed itself from one of the great invisible burdens that has weighed it down, to protect industrial development in specific areas where it had to put factories to eliminate major unemployment, excessive in some zones, and specific factories of low productivity that employ a great deal of labour power, precisely in order to employ the greatest number of *compañeros*.⁸⁰

Guevara turned to the question of raising productivity, which he argued must be accompanied by a drive to raise the technical level of the population. The Cubans' deeply rooted fear of unemployment must not translate into resistance to the increasing mechanisation and automation of the economy, he said.⁸¹ Superfluous workers represented social unemployment of national resources and Guevara insisted that they be withdrawn from the workforce and given a salary to study, to acquire technical knowledge. Meanwhile there would be an immediate rise in productivity per worker in the workplace they left behind. He considered this to be an economical solution to the problem of underemployment. In March 1962, Guevara said that Soviet advisors had recommended closing the small bakeries in Cuba, replacing them with six big factories and sending the surplus workers to study, thus freeing them from the inhumane conditions of their work. This would cost almost nothing other than the investment into the new factories, given that the surplus workers were already being paid a salary. Illustrating the point, he said that when three people are employed on a job which one can do, the surplus workers are effectively unemployed, just like a bureaucrat in a surplus post:

But if those two workers are removed and given a salary they can live on, given technical training, and the other man works for the three of them, produces for the three, creates a surplus for the three, is that not the same? What more do we have to spend on? The cost of those two comrades studying. Maybe if we lower the salary a little, rationalise the studies, it will work out the same. That means that we have the possibility of training fifty or sixty thousand surplus workers, for no extra cost; for the cost of reorganising work. This is the main proposal.⁸²

Indeed, in 1962, thousands of Cubans were removed from their workplaces as the result of a rationalisation of production; small artisan industries were

grouped into large work centres with improved technology. Redundant workers were sent to the 52 People's Schools set up by MININD, receiving a salary to study.⁸³ By January 1963, 5,050 workers in the People's Schools had qualified in technical courses taken within factories in MININD. Borrego, who attended their graduation ceremony with Guevara, explained that: 'They had learned to make spare parts and equipment for use in the new industries.'⁸⁴ Guevara announced that in the future technicians would study in the new technological institutes and specialist schools which the Revolution was creating.

In May 1964 Guevara proposed that factories where production had temporarily stopped because of a lack of raw materials or other problems, the workers should continue to receive 100 per cent of their salaries, but with the obligation to study, thus paying them to raise their skills levels: 'and in this way we will be contributing to the problem of training, which is so serious for us'.⁸⁵ He proposed that the EC of Soaps and Perfumes and the EC of Pharmaceuticals and any others branches which suffered bottlenecks and stoppages – the results of raw material shortages following the imposition of the US blockade and the shift in trade relations – should consider dividing the year between six months of production and six months of training for the workers. This solution, Guevara said, needed to be studied further, but it was better than reducing workers' salaries during production stoppages.⁸⁶

Guevara's policy of training the unemployed attempted to reconcile two seemingly contradictory objectives: eliminating unemployment and raising productivity. Surplus workers were unproductive for society, while students had the potential to improve the efficiency of the productive forces.

SALARIES

The issue of salaries was a concern for the entire revolutionary government. There are complex links between salaries, unemployment, trade unions, workers' incentives, absenteeism, the lack of skilled workers, economic development strategy and inflation. The discussion took place in the context of growing social welfare provision, expanding free education and healthcare, massive reductions in rent and utility bills, universal rations of basic foodstuffs, mixed ownership of the means of production and the introduction of central planning. Government measures to freeze the prices of basic commodities and salaries in state-owned enterprises were undermined by the action of private entrepreneurs remaining in Cuba, who could pay workers more, undercut state prices or use their supply monopolies to sell produce at extremely high prices.

Given all these contradictory forces, the process of devising a new salary scale was a challenge which took years to resolve. Guevara and his vice ministers cooperated on the project with the Ministry of Labour. According to Borrego,

who was also involved: 'Che was very agitated by the delay in producing the new salary scale. It was very difficult, but it couldn't be rushed, this was a complex problem ... We needed to discuss with the trade unions until they agreed to the new scale we were proposing, we needed to convince everybody else.'⁸⁷ Guevara felt that the BFS was incomplete as an economic management system until the wage structure was introduced in early 1964. The system of remuneration was a vital component of Guevara's steps towards the de-commodification of labour which was pivotal to the BFS.

As President of the National Bank of Cuba in 1960, Guevara had already warned that salary raises could lead to inflation and expressed concern about the effects on national development strategy: 'We have to struggle hard against a rise in salaries, because a rise in salaries means one less man can be employed. The capital of a country is one whole, and we cannot create it with a little machine, this is false. The more money we create, the less value this money has.'⁸⁸

The threat of serious inflation continued to hound the Cuban government in the following years, caused by salary increases, goods scarcities and manipulation of Cuba's money supply by opponents of the Revolution.⁸⁹ In March 1962, Manuel Malmierca, an EC director within MININD, insisted that 'the most serious problem that we have in industry today is the problem of the salary; this is undeniable'.⁹⁰ He recommended that the search for a solution to this be prioritised. He was addressing Guevara in the ministry's bimonthly meeting, which was dominated by the issue of salaries – apprentices awaiting salary rises, pay variations between factories of similar production, salaries changing or staying the same when workers were transferred. When Guevara asked the EC directors if the workers would accept a new pay scale, one of them, Miguel Dominguez, assured him that 'they are waiting for it like crazy'.⁹¹

Guevara responded to their challenges by explaining that increasing money supply; for example, via salary rises, leads to inflation, unless there is an increase in production:

What is money if not a commodity that serves to acquire other commodities? ... What does it matter if a man earns \$1,000 monthly if he cannot spend it? ... We cannot inject a mass of money into circulation if we do not have the products on which to spend the money; this is elemental. We are working towards raising the salaries. Well, we can raise them, as high as you want ... I have seen it in Bolivia, where you have to pull out \$140 to pay for a coffee, magnificent! You go to the bank and withdraw a bag of ten or a hundred thousand pesos to buy four things. That means the amount of money that you earn does not mean anything, the question is the amount of products that the money can buy.⁹²

He urged directors to get to the root of the issue themselves in discussions with the workers. Real salaries were falling largely because private businesses were raising their prices and the wage increases won by trade unions, or offered by private employees, were creating inflationary pressures. Cuban economist Carlos Tablada explained that ‘the bourgeoisie followed a policy of increasing wages, either out of fear of conflicts that might result in intervention by the revolutionary government or to destabilize the economy through inflation. Revolutionary administrative bodies helped deepen the chaos by setting wages arbitrarily’.⁹³ Guevara was quick to point to the problems created through their own mistakes: employing people who produced nothing, creating a formidable bureaucracy, badly conceived investments, sumptuous expenditures. Consequently, the population had eaten all the food produced in Cuba, from cows to *malanga*, he said.⁹⁴ The solution was not just to equalise salaries. The problem had to be confronted through discussion; with the trade unions, in the workers’ assemblies: ‘We are to blame and that must be said honestly. What will happen? The working class wants to condemn us for this? Man, let them condemn us, let them change us, let them shoot us, let them do anything. But the problem is still here.’⁹⁵ Nonetheless, Guevara noted that the government had won prestige among the mass of workers because it had previously delivered when it said it would. He concluded optimistically that through discussion, coordination and a little patience, a solution would be found within two months.⁹⁶

Pedro Pastor, director of the EC of Wood, agreed that the workers had demonstrated they were prepared for any sacrifice necessary, but that they did not understand the salary variations between workplaces and between ministries.⁹⁷ Holiday pay, for example, was paid in some enterprises, but not others. Another director pointed to a contradiction in the law because workers who suffer work accidents were paid half, while those off sick received full pay.⁹⁸ Ramírez, director of the EC of Cement, expanded on this, pointing out a discrepancy between his enterprise’s policy on sick pay and a new government law: ‘we are paying people in full, but the law, which is retroactive from the 15 February, says that we should pay them half’.⁹⁹ Prior to 1959, many workers paid 2 per cent of their salaries to a private insurance company which would pay out up to \$2,500 when the worker died. The company no longer operated in Cuba, but many old workers wanted to keep paying their 2 per cent. Ramírez had given instructions to stop the insurance deductions, as the EC was in no position to offer any payouts, which would anyhow now be additional to free state provision.¹⁰⁰

In some workplaces, according to Pastor, it was the ‘nucleus’ itself – the groups of workers elected as a vanguard – who were ignoring ministry regulations on salaries: ‘There are cases that the factory nucleus themselves

are asking for a salary increase, people who are supposed to struggle against this are creating the problems. This is happening because even the nucleuses are not clear.¹⁰¹ At around 6 per cent, inflation was not out of control, but Guevara understood that its present level made a wage freeze unsustainable without political consequences and that the minimum salaries would have to be reconsidered, because

we cannot have an anti-worker policy, when there is still a middle class, a petit-bourgeoisie. It is the land-owning bourgeoisie in reality that is gaining; and a class of intermediaries that is earning fabulous dividends, in the buying and selling of commodities. And how are we going to say 'No, comrades, here the salaries are frozen, everything is frozen.' The people will say: 'Everything frozen, when shoes cost double, when clothes cost double, when there is no *malanga* and when you can get some it costs so much?' ... [The salary freeze] brings conflict with certain sectors of the working class, but it is a measure taken to defend the working class; because the inflationary process, comrades, is the most tragic process that a country can live through, from the point of view of development and of social adjustment. The Argentinians know this well; the Chileans, I don't know if there are any here, they know this even more; the Uruguayans also know this; and it is a thing of complete disruption and a terrible mess.¹⁰²

Inflation, the result of goods scarcities and the manipulation of prices by private enterprises, demonstrates how the mixed economy, even with a minimum of private ownership, was an obstacle to socialist construction. This contradiction was largely overcome with the Revolutionary Offensive of 1968 which nationalised the remaining private businesses in Cuba. In 1962, however, the challenge for the revolutionary government, Guevara asserted, was to maintain the salary freeze whilst the new salary scale was restructured and applied. This meant constant engagement with the trade unions and workers' assemblies on the issue.

Salaries and training were two of the four issues prioritised for the year in MININD in 1963. In March 1963, the salary scale had still not been implemented nationwide. Guevara warned that this would create more problems and gave a one-month deadline for work norms to be applied and salaries categorised in every workplace in MININD:

otherwise we are going to have another year of tricking the workers, of asking for more time, of tense Assemblies because the people feel deceived by our continuous offers. The plan was that from the 31 December they were going to have many of the enterprises operating with norms and now the majority will have norms by the 31 March. The plan is very behind.¹⁰³

A pilot test was carried out with the new salary scale applied to 247 work centres with 40,000 employees across different ministries and including some of the country's most economically significant production centres. In October 1963, Minister of Labour Augusto Martínez Sánchez announced that it had resulted in an average increase in production of 9.2 per cent and in productivity of 17.4 per cent. The greatest improvements were seen in the Ministry of Construction, which saw a 39.2 per cent expansion in production and a 56.2 per cent rise in productivity. The National Institute of Agrarian Reform (INRA) improved 19 per cent in both categories and MININD by 5.2 per cent in production and 14.3 per cent in productivity.¹⁰⁴ Martínez concluded that it was now essential to apply the scale in all state-owned work centres. Finally this was achieved in early 1964. In May 1964, the Council of Ministers decided that workers not active on production would receive 50 per cent of their salary.¹⁰⁵ These measures were important steps towards universalising work norms and pay, consistent with the concept of work as a social duty under socialism. While Martínez highlighted the enthusiastic support received by the working class for the new salary system, he complained about weak trade unions which 'vacillated before any organisational measure which altered old habits of work and organisation, inherited from capitalism. In many work centres trade union branches have not confronted the implementation [of the new scale] with the necessary revolutionary militancy, and some saw the plan, not as a plan of the Revolution, but as a measure adopted by a ministry.'¹⁰⁶ They were stuck in old economist patterns of behaviour.

Trade unions and 'economism'

There was a negative tendency in trade unions led by old union leaders who, at the triumph of the Revolution, used the fact that this was a Revolution of the workers to obtain in a disorganised and, it could even be said, ruthless way, big salaries that did not correspond with the country's economy. These economic tendencies infiltrated the workers' ranks so the Revolution was seen only in terms of how much they earn and how much more they want to earn, without analysing how the Revolution should be made and how much it costs; ruining consciousness by taking a syndicalist position as if the state were just a foolish big boss from whom they had to get the most out that they could.

Faure Chomón Mediavilla¹⁰⁷

Faure Chomón Mediavilla was a founding member of the student-based Revolutionary Directorate (DR) which fought Batista, taking over as head after the group's leader, José Antonio Echevarría, was shot dead in 1957. The DR collaborated increasingly with the M26J, merging after 1959 in the new revolutionary government. In 1963, Chomón transferred from Minister of Communications to Minister of Transport, but he also had the task of

debating with political-economic issues with the trade union leadership. In reality, Chomón's task meant reorganising the union leadership, pushing for the election of new cadre. He said these measures 'defeated this [economistic] line which affected productivity, encouraged indiscipline and crude customs in the workers' relationships', insisting that 'The Revolution never imposed a change that was not discussed in the Production Assemblies by the mass of workers.'¹⁰⁸

The militancy of organised labour in Cuba, under the influence of anarchists and communists from the early nineteenth century, had abated into economism and cooption by the mid 1940s under the Autentico government. This was largely achieved by the targeted repression and murder of radical leaders and the cooption of the trade unions into the state apparatus. As a result of authoritarian cooperativism, some sections of workers were granted significant improvements in salaries and conditions which entrenched economistic tendencies within the trade union movement. Eusebio Mujal, head of the Cuban Workers Confederation (*Confederación de Trabajadores de Cuba – CTC*), responded to Batista's coup in March 1952 with cooperation and complicity. There were notable exceptions – transport workers, bank clerks, dockers and sugar cane workers – who organised strikes in the 1950s without official CTC support. During the 1950s the revolutionary groups built up alternative labour organisations culminating in the launch of the National Workers Confederation in late 1958. The shell of a class-conscious revolutionary trade union apparatus had been set up. However, old trade union leaders still had to be won over to the role assigned them by the new regime; working 'within the Revolution' in the interests of the whole working class, not just promoting sectoral interests from the margins. Fidel Castro told the trade unions that they should not be struggling for crumbs, but to take power.¹⁰⁹

Trade unions clung to outstanding agreements, insisting that they be guaranteed by the Revolution. Guevara recognised the need to honour existing salaries, which reflected trade union victories over years of struggle to defend their workers. In March 1962, Malmierca complained in the Ministry:

The trade union has fought with us every time there's been a problem in the factory ... Problems have been resolved by talking of the 'country or death', of Fidel, of Che and of every one else ... the trade unions have wage agreements which they demand are met. One the one hand we say, 'We are going to meet the agreements', then on the other hand 'No we won't complete the agreements'.¹¹⁰

While Guevara said it was a 'suicidal' mistake to continue to raise wages before the new salary scale was implemented, he conceded that the masses had not reached a high enough political consciousness to enable the government to

reduce their salaries: 'the abandonment of what they have won over the years, what was evidently given to them by the bosses, in their old relationships'.¹¹¹ Class struggle, not just the law of value, determined the capitalists compensation to labour.

Guevara's own approach to trade unions in socialist construction was radical and dialectic. In July 1961, in an article in *Trabajadores*, he outlined two distinct responsibilities for the unions: to promote the goals of the government among the workers and to defend the immediate material and spiritual interests of the workers. These were not contradictions, but complementary, he asserted. For example, a trade union should intervene on the workers' behalf in response to a government directive to double production by demanding that conditions are improved:

The establishment of the socialist system does not liquidate class contradictions but it alters the way of solving them. Now also, there will be contradictions and in this the trade unions will play an important role; they will establish the points of view of a given sector of workers when their necessities are possible to satisfy without damaging the general interests of the mass of the working class; the construction of socialism and industrialisation of the country in a short period ...¹¹²

Guevara recommended that trade union leaders were incorporated into the Management Councils of all MININD work centres.¹¹³ Mutual cooperation between the administrator and the trade union representative would provide a clearer picture of the state of consciousness of the mass of workers, and of the economic objectives of the management: 'The trade unions are intimately linked to a rise in productivity and to work discipline, two pillars in the construction of socialism. And also in the training of administrators from among those workers, raising their general political and technical level.'¹¹⁴ In all administrative matters, the administrator had the weight of responsibility – the coordination and ideological development of the masses, was primarily the task of the trade unions. Contradictions must be resolved through discussion, 'because the superior weapon of the working class, the strike, is precisely the weapon of the violent definition of class contradictions, which cannot occur in a society on the path towards socialism'.¹¹⁵ Guevara noted optimistically that such conflicts no longer occurred in Cuba, and pointed to the role of the trade unions in promoting and leading workers' participation in voluntary labour as evidence of growing political consciousness. This was increasingly the case in MININD.¹¹⁶

A year later, Guevara urged MININD directors to read Lenin's *The State and Revolution* which demonstrated that all the old institutions of bourgeois society would be destroyed – including, he said, the economist trade unions

and those which defended the old institutional forms and agreements and who confronted the new administrators as if they were the old bosses. 'One thing I am convinced about is that the trade union is a hindrance, we have to tend to its destruction. Not destroying it by knocking it out, but rather to destroy it as the State itself should be destroyed at some moment, as the people advance to the point where it is longer necessary to have this institution called the trade union.'¹¹⁷ He continued, criticising Cuba's post-1959 trade unions as mechanical and administrative because they had been based on the trade union model in the USSR. Copying was not Marxist, he complained, accepting responsibility for this mistake as a member of the Council of Ministers.¹¹⁸

In his final meeting with MININD's directors in December 1964, Guevara stated that, contrary to his earlier incorrect assertion, the administrator *was* a political leader, not just a bureaucrat. Trade unions, on the other hand, were associations of workers organised against the patron; a product of class oppression. As the means of production passed into the hands of the workers in socialist society, class contradictions disappeared and trade unions had no reason to exist. For now, contradictions remained but new means had to be found to resolve them. Workers who became administrators did not become enemies of the working class. Contradictions clearly remained or trade unions would have already disappeared. He suggested that the recently created Commissions for Labour Justice, where administrators and workers coordinated together, were a possible first step to resolving those contradictions.¹¹⁹ Created in 1963 by the Ministry of Labour and the Cuban Workers' Central Union (Central de Trabajadores de Cuba – CTC) to tackle the problems associated with salaries, workers were elected onto the Commissions by their colleagues to liaise with administrators. Borrego explained their role:

These workers attended seminars about labour justice to learn the law and defend the workers. When there was a problem, for example a case of indiscipline, those on the Commissions were consulted on the law to assess what punishment should be applied. The Commissions received legal advice. They aired problems about the norms of work protection, for example, and anything else that could arise in a work centre which effected production.¹²⁰

Guevara said the workers were enthusiastic about genuinely selecting their representatives for the Commissions – better than the questionable democracy of trade union leadership: 'The Party meets and proposes to the masses that "so-and-so" is the only candidate and then they are elected ... in reality without a selection process of the masses.'¹²¹

Recognising that people need institutions through which to express themselves, Guevara suggested that if the Commissions were capable of winning

the confidence of the people, they would be more suitable than the trade unions in representing the interests of workers and the administrators – who are also workers – and for resolving the general problems of the work centres. This would allow the ‘beautiful act’ of the self-elimination of the trade unions, in name and in form; as the manifestation of class antagonism. At the same time it would create the necessary democratic vehicle for the new institutions being created: ‘In this moment I would even say that the trade unions could already stop existing ... and transfer their functions to the Commission for Labour Justice which would combine them with concrete tasks and whose members would be elected.’¹²² Guevara was confident that everyone would agree with him, except for the union bureaucracies. He concluded that the issue of trade unions still had to be discussed and resolved in a proper manner without offending the feelings or interests of any *compañeros*.¹²³

Guevara was clear that the transition to socialism throws up the need for an innovative new infrastructure which both promotes and reflects the resolution of class conflicts in the interests of the working class. In the dialectic of this struggle, trade unions must transform and adapt themselves from organs of confrontation with the state, into the collective owners of the state. This was a necessary precondition for the gradual decline of class antagonisms all together with the creation of a truly socialised economy, where national production is organised as in one big factory, determined by the plan which was made democratically through workers’ discussion.

New salary scale

We inherited from capitalism an enormous quantity and variety of different wage rates for the same qualifications. As you know, under capitalism wage rates are a product of the sale of labour power and are influenced by the class struggle. In addition, as a neo-colony dominated by US imperialism, Cuba was once an area of investment for the US manufacturing industry, which applied wage rates that were much higher than previously known in Cuba, although the pay was several times lower than workers in the United States would receive for the same work. All this made the wage question more complex and increased the number of wage differentials. We have calculated there were some 90,000 different salaries in Cuba and some 25,000 different salary grades.

Che Guevara¹²⁴

Cuban economist Carlos Tablada underlined the complexity of the task undertaken in designing a new salary scale: ‘drawing up a list of job descriptions and skill requirements for each job; and evaluating, from the standpoint of complexity, more than 10,634 occupations, dividing them into 340 categories based on skill level ... reorganizing thousands of different wage rates into a total of 41 for the entire economy ...’.¹²⁵ After two years’ work, with a wage

freeze in place, and with the positive results of the pilot test, the scale was finally introduced nationwide in 1964. The key points of the new salary scale were: current incomes would be respected, workers had material incentives to improve their qualifications, production norms were established where possible, and work norms in all workplaces. Workers were paid according to the norm with capped bonuses for over-completion and a proportion withheld for under-completion. There were two additional higher pay scales for dangerous work in each category. In addition to eliminating the divisive and anarchic payroll inherited from the capitalist era, the new scale was necessary because, according to Martínez, ‘we can’t organise the socialist economy without organising the salaries, in accordance with the socialist principles of distribution’.¹²⁶

All wages were grouped into eight categories, a rate was set for each group and every possible employment in Cuba was categorised within one of these groups. Work norms were established for each job.¹²⁷ There was a 15 per cent differential between the eight hourly wage rates, reflecting a rise in complexity and worked out on the basis of coefficients of the simplest employment. Harmful work conditions were rewarded with an extra 20 per cent over the base rate – dangerous conditions an extra 35 per cent. The full salary was received by workers who completed the norm established for each job. Workers could receive a bonus for over-completion but this could never raise the salary above the base rate of the next wage group up – that is, 15 per cent. Of that bonus payment, 50 per cent was paid to the worker and 50 per cent to the state – consistent with Marx’s notion of deductions for social investment. This encouraged workers to identify their own material interests with those of the state, as their extra work effort benefited both.

However, the revolutionary government had to avoid slashing existing salaries or risk creating another exodus of skilled workers, so a clever clause was introduced to avoid reducing incomes whilst still implementing the new scale. Those receiving a salary higher than the rate corresponding to their work group had their salary split into two parts: basic salary and ‘historical salary’ – the pay actually received. For example, if a worker received six pesos per day, but the daily salary corresponding to their skill group was four pesos, their salary would be configured as four plus two – where four is the basic wage and two the ‘historical wage’. When their basic salary rate was raised, either by a general salary rise or because they had attained higher qualifications, their total salary would still only reach six pesos (for example, five plus one) until their basic salary equalled their historical salary, meaning that they could then be fully incorporated onto the national scale without distortions from the capitalist era. As old workers retired and a new workforce was incorporated on the basic rates, the wage fund and hence the costs of

production would decrease. Inequalities would decrease; not by lowering the wages of those in the top bracket, but by raising the salaries of those with the lowest incomes. Fidel Castro explained: ‘The Revolution cannot equalize incomes overnight. The Revolution’s aspiration is to arrive at equal incomes starting from the bottom up, not from the top down. It would be incorrect to do it the other way.’¹²⁸

Table 4.1 Salary scale: categories and wage rates (in pesos)¹²⁹

Category							
I	II	III	IV	V	VI	VII	VIII
0.48	0.56	0.65	0.76	0.89	1.05	1.23	1.49

The wage rate for the first group, 48 centavos (see Table 4.1) – consistent with 85-pesos monthly minimum wage – reflected the first significant concentration of workers’ wages, 19.11 per cent of Cubans received 45–49 centavos per hour. To pass into a higher bracket, workers had to engage in training. Sáenz explained:

If you are a mechanic of a certain level, regardless of your industry you receive the same salary as your colleagues. If you want a higher salary you have to study. If you are a mechanic B, you have to train to be a mechanic A to get a pay increase. This idea couldn’t be implemented without ideological support, because to practice Che’s ideas it was necessary to have the ideological support of the working class, of the managers too, the enterprise directors, and so on.¹³⁰

The scale eliminated piecework, which was considered to be a brake on technological development, particularly in employment where technical norms could not be established. Martínez explained: ‘Furthermore, piecework in general foments the material interest of the worker in the increase of their private yields, independent of the results of social production. This fosters individualism and separates the workers from the collective interest.’¹³¹ Interestingly, at INRA, where piecework payment had been widely applied before the new salary, the results of the pilot study in terms of production and productivity were among the best. The new norms and salary scale had been implemented in 1,753 MININD work centres, affecting 110,081 employees, which was 63 per cent of the ministry’s workforce by December 1964.¹³² As a result, the average salary rose by 5.2 per cent and worker productivity increased by 21.7 per cent, reducing the salary-cost of production by 19 centavos per peso. 71 per cent of MININD’s non-administrative workers (69,613 out of a total workforce of 98,206) and 60 per cent of administrative workers (7,183 out of 11,875) were placed in the lowest three skills brackets, salary groups

I–III, indicating the low qualifications and technological level in MININD – reflecting conditions among the population as a whole.¹³³

In 1967, the day after returning to Cuba from leading a military expedition to the French Congo whilst Guevara was in the Belgian Congo, Jorge Risquet replaced Martínez as Minister of Labour, responsible for implementing the salary scale. Reacting with alarm to his nomination, Risquet pointed out that he knew nothing of the numerous laws, policies and institutions which would be under his control. But the task was a political one and involved coordination with the trade unions in an attempt to unify various political tendencies. Risquet had been a member of the PSP since the age of 13 when he joined its youth wing. He said: ‘when Che and Carlos Rafael [Rodríguez] argued about the new salary scale, Che won, and he was considered to be right’.¹³⁴ However, implementing the new salary scale took tremendous work, because the scale was so narrow that it was difficult to place thousands of trades into only eight subdivisions. He highlighted three principal problems. First, it cost to implement – the wage fund was increased as workers benefited from the minimum wage. Those on higher incomes had their income maintained because the ‘historical wage’ was respected. Second, some workers resented having to split their capped bonus payments for over-completion of the norm with the state: ‘I remember in one meeting with the Dockers’ Union the workers told me that they felt a lot of respect for Che, but that they did not understand the scale.’¹³⁵ Third, if everyone went 30 per cent over the norm, the norm itself had to be revised. In Risquet’s view this became a brake on productivity, because workers could stop trying to exceed the norm. Nonetheless, once Guevara’s wage structure was implemented, it was not until 1976 that it was adjusted, remaining as a general guide until 1989 when the collapse of the Soviet bloc drastically changed the political and economic conditions in Cuba and new salary regulations were introduced. Given the phenomenal advance in education and training in Cuba since 1959, a principal function of the salary scale – to promote skills training and qualifications – was no longer an urgent priority.

According to Roberto Bernardo’s study of incentives in Cuba, ‘The Cuban and Chinese view of the debate on incentives is that the test of whether a society relies primarily on moral incentives is found in the extent to which it has abolished the market wages system – where labor is allocated like any other commodity.’ Since 1966, he concluded, both countries had eliminated the labour market ‘in the important practical sense of the word market’.¹³⁶ This was a step towards the decommodification of labour which Guevara pursued. Remuneration was still determined on the basis of work done, according to an established norm. This was consistent with what Marx, in the *Critique of the Gotha Programme*, described as ‘bourgeois right’ in the transition

period – the distribution of the social product to individuals according to the work done. It was still a long way off from communist distribution based on need: ‘from each according to his ability, to each according to his needs’. However, the narrow pay categories about which Risquet complained began the process of converging salaries, equalising the material conditions of Cubans – a precondition for harmonising the socioeconomic and political interests of all workers. Furthermore, the wage differentials which remained did not translate into equivalent consumption differentials because of the effect of rationing, free social welfare provision, subsidised services and the scarcity of consumer goods for sale; all of which acted as wealth equalisers.

CONCLUSION

Forced to confront the scarcity of technical and administrative personnel, Guevara developed an apparatus to institutionalise the national educational drive, first within the Department of Industrialisation and then in MININD. It served three functions simultaneously: education as culture, political education and education for production. Classrooms and study circles were established throughout MININD workplaces and by the political organisations in the ministry. Skills training and qualifications were promoted via the capped material incentive of the salary scale, by embedding the concept of *superación* and with the use of administrative control mechanisms: sixth-grade exams, the School for Administrators, specialist schools, education for the unemployed and underemployed. In addition, Guevara constantly sought mechanisms to break the link between work and remuneration at the heart of the capitalist mode of production and, by undermining the operation of the law of value in labour allocation, began a process of decommodifying labour. Education and training meant self-improvement which in turn meant social development, improving the productivity and efficiency of the productive forces necessary for the transition to socialism. Education was political; politics was revolution; revolution was *Cuba Socialista*. These were processes underway throughout the island, but they were exemplified in MININD. As María Teresa Sánchez said: ‘If there was a ministry where the people were politicised it was MININD.’¹³⁷ These policies became key elements of Guevara’s BFS and integral to his conception of socialist transition.

5

Administrative Control, Supervision and Investment

‘Crazy Horse’ was the name Ángel Arcos Bergnes earned himself as he raced between sugar mills in eastern Cuba, often in the middle of the night and always armed, to defend himself from bandits and counter-revolutionaries in the countryside. His task was to standardise the accounts of the newly nationalised sugar mills as part of a process of decentralising administrative control, so that workers would know the results their own production. But this meant transferring accountancy tasks to many mill administrators who lacked the necessary training to manage such accounts. While the US-owned mills on the island had advanced accounts, most of the Cuban and Spanish-owned mills ran basic systems – their balance of accounts being organised from Havana, with bookkeepers in the provinces sending receipts to the capital.¹ All the mills had to be converted from a capitalist to a socialist accounting system, grouped by size and audited: ‘90 per cent of our work involved standardising the accounting system everywhere. I would go to a mill at 2am and call another one to say that I would arrive at 5am.’ Arcos met with economic personnel and clarified their doubts about the new socialist accounts. He directed a group of auditors in every province: ‘They weren’t very revolutionary – at the beginning they worked, but when they saw the Revolution was moving to the left, some went. A couple of auditors in Oriente were formidable, but they left because they didn’t agree with communism.’²

Two-thirds of certified public accountants joined the exodus of professionals leaving the island between 1959 and 1961.³ Eight hundred remained, but professional expertise was concentrated in Havana, especially for the sugar industry which dominated the Cuban economy. The modern sugar mills in the Oriente province in the east were US properties staffed by US managers, accountants and technicians. The rest of the advanced mills were in Camagüey, in eastern-central Cuba.

Before 1959, Arcos was an auditor in a US corporation which owned three sugar mills. He also worked clandestinely with the 26 July Movement (M26J) in support of the Revolution. In 1960 he was named General Auditor of the General Sugar Mill Administration (Administración General de Ingenios – AGI) in Camagüey province which had 24 mills. This operated under the National Institute of Agrarian Reform, alongside the Department of Industrialisation headed by Guevara. When the Department became the Ministry of Industries (MININD), the AGI was transferred there. In 1961, Oriente province was added to Arcos' portfolio with another 41 mills, and in 1962 La Villas province with a further 51 mills. In late 1962 he was transferred to Havana as general auditor of Cuba's 161 mills and 50 related units from refineries to distilleries. Following the nationalisations, Arcos' task was to facilitate the decentralisation of accounting procedures – democratising the economy.

Accountants in Havana were not keen to take up work in the provinces. But as the mill professionals left the island, the Revolution expropriated their houses and offered them rent-free as an incentive to the *Habaneros* to move to the countryside. Arcos studied socialist accountancy in a course organised by Guevara. He then gave seminars to train accountants in Havana and drove them in bus-loads to the east of Cuba where they had agreed to spend two or three months teaching the old bookkeepers or new administrators – most of whom had a very low educational level. 'It wasn't easy to get those old accountants from Havana out to the small sugar mills. Some of them hung around for longer, like Carlos Sela, who ended up staying in the countryside for 20 years.'⁴

By late 1961, 75 per cent of the value of industrial production was in state hands – but most of the emergency administrators put in charge during the nationalisations lacked basic accountancy training. Their absolute priority was to keep production going – which they did often without awareness of the need to collect statistical information or to keep accounts. The strategy of prioritising production and placing workers loyal to the Revolution at the head of industry was evidently successful. In October 1960, before MININD was set up, Guevara reported that most of the new state industries had increased production since they were nationalised.⁵ The threat of economic paralysis had been overcome. There had been some disasters, in bankrupt industries which workers had taken over in the name of the Revolution, but Guevara was confident that these could be improved with major organisational changes and technological adjustments. Of the Department of Industrialisation's 300 factories, only ten were operating at a loss – three of them significantly so. All three had been set up by Batista's Bank of Economic and Social Development (BANDES).⁶

Young revolutionaries were sent quickly to learn basic accountancy. Alexis Codina Jiménez graduated from the School of Commerce to become head of accounts at the large Consolidated Enterprise (EC) of Flour MININD in 1961. He described the situation:

When the Revolution triumphed it was most important to get food to the population. As an accountant I had to argue with people to establish controls. Flour arrived from the Soviet Union and we sent trucks to pick it up at the port. But no one was concerned with recording the value, and later, when I checked my figures against the real food quantities, they didn't coincide. The administrators didn't have an economic culture ... When you make a plan you start by compiling information about what you consume, how much it costs, and so on. At that time there were no statistics. I visited enterprises where there was no accounting. The statistical base was very important in my work, but there was no tradition of registering accounts.⁷

Administrators had to learn accountancy on the job, whilst accountants who supported the Revolution became administrators or directors. In 1962, José Luis Puñales was named administrator of a brewery which had belonged to the Bacardi Corporation. Puñales said: 'The previous administrator had been Pepin Bosche, a famous economist. We are talking about a semi-illiterate replacing an economist.'⁸ By late 1963, Puñales was promoted to become director of the EC of Beer. Also, from a humble background, Orlando Borrego rose to prominence at Guevara's side because he had basic accountancy training and had fought in the Rebel Army: 'I had no aspirations to hold any position of this type. I just knew accounting and Che asked me to help him in the economic aspect first in La Cabaña and after in the Department of Industrialisation.'⁹ Borrego continued as Guevara's deputy when the Department was transformed into MININD.

Administrators who struggled to pass their sixth-grade exams lacked the statistical literacy necessary for accountancy. They worked through a *Procedure Manual* with guidelines on numerous administrative functions. Guevara constantly pushed his directors, and through them, the administrators, to dedicate energy to learning statistical analysis. Without this his vision of administrative control of the economy – the successful implementation of planning, free from the anarchy of the capitalist market – would never be achieved. With one eye constantly focused on the most advanced administrative and technological techniques worldwide, which could facilitate the shortest route to communist development, Guevara ultimately looked to the complete computerisation of accounts and planning control.

Counter posed to Guevara's vision – automated accounts in real time, advanced management techniques, total inventory control, comprehensive

economic analysis, decentralised investments and quality controls – was the prevailing reality of manual accounts, the absence of basic statistical knowledge, financial indiscipline and a lack of control at all levels. His approach was to encourage learning by doing, to push for analysis and, as part of a dynamic search for solutions, work with all available experts, laying the groundwork for future advances even while struggling to overcome present backwardness. Guevara had a flexible approach to questions of control, decentralising to encourage initiative and centralising to ensure control. But there was clearly a weakness in the ministry which was never overcome – the dependence on Guevara and a handful of individuals to personally highlight and resolve daily problems in administrative control, supervision and investments. Cognisant of that weakness, Guevara set up mechanisms up to reduce this dependence by compelling and educating workers to learn to carry out economic analysis at the base level of production.

ADMINISTRATIVE CONTROL

Che devoted absolute, total, priority attention to accounting, to analyzing expenditures and costs, cent by cent. Che could not conceive of building socialism and running the economy without proper organization, efficient control, and strict accounting of every cent. Che could not perceive of development without an increase in labour productivity. He even studied mathematics to use mathematical formulas for economic checks and to measure the efficiency of the economy. What's more, Che even dreamed of computers being used in running the economy as a key factor to measure efficiency under socialism.

Fidel Castro¹⁰

In Guevara's analysis, 'The law of value and planning are two terms linked by a contradiction and its resolution.'¹¹ While supporters of the Soviet economic management system, the Auto-Financing System (AFS), argued that the law of value could be expressed through the plan, Guevara did not.¹² Planning was the product of the conscious organisation of the national economy in pursuit of political objectives. He perceived the plan as a social contract, a democratic product devised through workers' discussions. However, once the plan was agreed, mechanisms had to be in place to ensure its fulfilment. These mechanisms constituted administrative control and should include computerised accounts procedures to relay information in real time.

To prevent planning from being undermined by capitalist mechanisms it must be accompanied by an apparatus which has moved away from what Guevara called 'financial compulsion' – what the proponents of the AFS called 'control by the peso' – the profit motive. Guevara argued that it was possible to institutionalise an administrative system of checks and balances to permit

analysis of the entire production process. It was not necessary to depend on material incentives and other capitalist mechanisms in order to control and expand production. In January 1962, Guevara told MININD directors that with good control systems, modern accounting machines, a strong planning apparatus and daily inventory controls:

we can remove the problem of financial autonomy and convert financial compulsion (because financial autonomy is nothing more than compulsion of a financial kind) into a type of administrative compulsion, in such a way that we can monitor the apparatus and have centres where the concrete results of the factories tasks can be overseen, and immediately they will sound the alarm when there is incompleteness of any part of the Plan and the problems can be remedied.¹³

For administrative control to be achieved there would have to be a drastic improvement in statistical literacy and accounting methodology and structures would have to be implemented to monitor the costs of production. If accompanied by quality controls, the reduction of costs would be the means applied to raise productivity and efficiency in industry. The Budgetary Finance System (BFS), Guevara said, 'is fundamentally based on cost. This means the economic management of the organisation is measured by the cost, which is the real index that shows how the enterprise is doing ... what interests us is the analysis of cost, as it falls, its composition and where it can be lowered.'¹⁴

Cost analysis would replace the profit motive – or financial compulsion – thus creating a lever to improving both labour productivity and technological efficiency, without undermining the development of a collective attitude towards social production. Guevara believed that socialist enterprises must be more efficient than capitalist businesses.¹⁵ But only if this efficiency came through administrative control could there be a transition from socialism to communism, far removed from the operation of the law of value.

Advanced management techniques

'Made in the USA' – the function of a rifle is to kill. In the hands of Batista's troops, a US rifle is a weapon in the service of exploitation. But in the hands of the Revolutionaries, that rifle is an instrument of liberation.¹⁶ Guevara explained his idea in military terms, for a population emerging out of years of dictatorship and insurrection. The same applies for all technology – including administrative and managerial techniques, he insisted. Technology has no ideology. The BFS emerged out capitalism in the 1920s in Russia, using techniques far behind those operating in the capitalist corporations of 1958 Cuba, on which the BFS was based. Guevara declared that the BFS

is very similar to the accounting system of the monopolies, but no one can deny that the monopolies have a very efficient system of control and they take great care of every penny ... So it's not important who invented the system. In short, the accounting system that they apply in the Soviet Union was also invented under capitalism.¹⁷

From 1959, Guevara engaged in a prolific study of bourgeois literature on the science of management – from the classic texts to contemporary material – searching for practical influences he could apply in the Department of Industrialisation. He showed special interest in French industrial engineer Henry Fayol, from the classical school of managers, and Lea Iacocca, whose system of management training was adopted by the Ford Motor Company in the US.¹⁸ In addition to the theoretical models, Guevara studied the organisational structures of the most productive capitalist enterprises in Cuba as they were nationalised, to find which advanced techniques could be used for socialist administration. The advances achieved by humanity in the historical process of development should be applied without fear of 'ideological contamination' and regardless of the political system in which they emerged. The underestimation by socialist countries of the technological progress made within the most developed capitalist countries, particularly in management techniques, set back their own economic and technical-scientific development.¹⁹ On his first visit to the USSR in 1960, Guevara was struck by the backwardness of Soviet management and accounting techniques. Borrego, who travelled with him, recalled their visit to an electronics factory with 5,000 workers in which an abacus was used to do the accounts. Guevara had been studying the US-owned Cuban Electricity Company, Shell, Texaco and others which used the latest IBM accounting machines.²⁰

When the apparatus of MININD was under construction, Guevara ignored Soviet advisors who argued against the need for an Office of Organisation and an Office of Investigation. Enrique Oltuski, who had trained in the Organisation of Work Management in the US before working in Cuba as an executive for Shell, was involved in designing MININD's structure:

The Soviets didn't feel they needed an Office of Organisation because they had been organised for many years, but we were starting something new, without experience. Most of the people who came to work had absolutely no experience of management, of business organisation. That's why we decided to have an Office of Organisation, not only to work on the organisation but also to ensure that the members of the organisation understood the technical concepts of how an enterprise is administered. Equally, Che said: 'Believe in man, but control him.' The Plan was designed, directives were made but, he believed, after that their completion had to be controlled. An Office of Inspection was created that inspected whether the directives were adequately completed and, if not, whether it was due to a mistake or bad work by the manager.

This was very strict in the Ministry of Industries. The Soviets did not think they needed any of this because they thought their organisation was perfect.²¹

Miguel Figueras, who directed MININD's Office of the Perspective Plan – outlining a long-term industrial development strategy – said Guevara urged him to subscribe to three US business magazines including *Fortune*, which serialised *My Years With General Motors*, a book by Alfred P. Sloan, President and Chairman of General Motors from 1923 to 1956. Sloan was credited with creating an organisation which saved the company, but also with creating a new management concept which was consequently adopted by other businesses:

Fundamentally, the concept involves the coordination of the enterprise under top management, direction of policy through top-level committees and delegation of operating responsibility throughout the organization. Within this framework, management staffs conduct analysis, advise policy committees and coordinate administration. Mr Sloan's idea was to establish 'decentralized operations and responsibilities with coordinated control.' At the individual level, his policy was simple: 'Give a man a clear-cut job and let him do it.'²²

Guevara was impressed with General Motors' management system, with its single centralised bank account and budget.²³ In addition to the budgetary structure, other precepts of this approach to management are evident in the BFS structure; for example, the setting out of clear guidelines to determine levels of decision-making and responsibility within MININD. Guevara refused to make decisions which, according to the hierarchy of responsibility, should be made at lower levels, unless there were valid reasons.

In 1959, Tirso Sáenz was working for a subsidiary of the US corporation Procter & Gamble (P&G). He joined MININD and became a member of Guevara's inner circle. He recalled that: 'several times Che called me to talk to him about how P&G worked. What were the management mechanisms? How did they stimulate people?'²⁴ Whilst Guevara rejected the market socialism of Polish economist Oscar Lange, he concurred with his appreciation of the advances in econometrics and the potential for its application by socialist countries:

Che stressed that much of the technical progress which Lange described as a first step to applying the most modern management techniques already existed in Cuba at the triumph of the Revolution, above all the centralised systems of control established by various North American companies with their head offices in Havana or New York. He put the example of the Consolidated Enterprise of Petrol, formed by bringing together the three refineries in the country [Standard Oil, Texaco and Shell]

whose systems of control were maintained and even perfected and at that time were considered as the administrative model in the Ministry of Industries.²⁵

In 1962, Alexander Gerschenkron published his *Economic Backwardness in Historical Perspective*, promoting state-led industrialisation by 'backward' countries to facilitate their acceleration through the necessary stages of development to reach full industrialisation.²⁶ Guevara was aware of the school of contemporary development theorists which concluded that the state must be responsible for formulating programmes and plans to foster industrialisation. But he noted the weakness in this model; the impossibility of reconciling social interests with those of private property, thus strengthening his own convictions that the socialist path taken by the Cuban Revolution represented the only possible way to break the vicious circle in which the underdeveloped countries were trapped.²⁷

Despite the implied heresy in upholding capitalist techniques over those applied in the socialist bloc, Guevara published his views in the ministry journal *Nuestra Industria*. He insisted that automated control of the economy was achievable. The ministry had to focus on cadre development, the creation of a powerful statistical base, pay attention to supervision reports, and to struggle for quality at all levels.²⁸ He told MININD directors:

every unit should be perfectly calculated and through these indices it can be discovered why there are failures and this system can be perfected until it is weekly, then daily; so that accurate reports will come to the Ministry and they can be tabularised and everything can be detected and what's more, the enterprise can take measures, daily, constantly, like in a system that I have seen of teletype, or whatever it is, for national information, so production is controlled day by day and measures taken. Inventory controls will show the red light whenever there is an excessive inventory or a defect in any one of the units, or in any of the enterprises ... Statistics, the correct information at the unit level ... you have to organise this today and create the necessary indices and the necessary cadre so that information flows quickly and objectively from the base to the central organisation.²⁹

According to Borrego, by 1963 they had achieved a good level of management, but were still struggling to overcome mistakes made in the earlier period – the lack of an investment plan, production quality and of technicians, and failure to reduce costs and prioritise tasks. The *Procedure Manual* was upgraded in summer 1964 by the *Manual for Factory Administrators* which collated all the ministry guidelines on supervision and control, combining theory and practical instructions for factory administrators.³⁰ Section 2 outlined the 'fundamental concepts' – including 'analysis of costs', 'economic analysis', 'socialist management principles', 'financial discipline' and 'productivity'. Section 5 detailed the costs of production, with instructions

for carrying out economic analysis of the factory, advice on managing savings and the importance of developing inquisitive analytical skills; cultivating ‘a disciplined non-conformism’ in approaching problems and encouraging a collective concern in workers. Section 7 dealt with organisation; effective work methods and administrative techniques, summarising different management methods – global, detailed, sectoral, generic, and instructive. It concluded: ‘The obligation of the administrator is to point out the goals and to control their completion. The rest of the tasks can be decentralised.’³¹ About the flows of production, the *Manual* stated that ‘The organisation of work represents, at its base, the plan of mutual coordination between men and machines.’ The goal was ‘to produce more, of better quality, and at lower cost.’³² Produced nearly five years into his experience of organising and managing Cuban industry, the *Manual* gathered together the many approaches and policies enacted as part of Guevara’s apparatus for achieving administrative control of industry. It involved statistical and accounting procedures, inventory controls, supervision and inspection, contract arbitration, ministry control meetings, comprehensive annual reports, investment policy and quality controls. Implementation faced numerous obstacles in each area.

STATISTICS AND ACCOUNTING

Che was a founder of economic statistics in the revolutionary stage ... He started to create networks to capture and process data and statistics. He introduced the application of computers to statistical work, although in Che’s epoch there weren’t the computers of today, but he linked statistics with data capture and computing. Che worked on the organisation of a regional network, attempting to create an apparatus where local enterprises would yield accumulated statistics to regional offices, which would then process them and send information up to the national level ... For technical reasons the achievements were limited, but the idea was to create a network to capture national statistics ... He organised work groups and they even tried to apply this in the Ministry of Industries.

Fidel Emilio Vascós González³³

Once the production crisis had been averted and control procedures set up, Guevara prioritised the collation of statistics and accountancy. In March 1962, Guevara complained that the *Procedure Manual* was not being followed and suggested that all audits be suspended while a group of specialist auditors gave the municipal accountants classes in every workplace. He added: ‘the other problem, especially in the provinces, is that they request accountants and there are no accountants’.³⁴ While the administrators had to study and apply these new skills, the EC directors were responsible for staying informed about comparative costs, inventories and production processes:

It is not difficult to know. It is nothing more than the product of a work method which allows you to have the results of the activities of the enterprise, factory by factory and globally, on the table every week and to check where it is bad and what you have to resolve, without waiting for the administrator to explain to you so that you then explain to the vice minister, who explains to me, and that I explain to the government: you lacked raw materials.³⁵

In September 1962, Guevara tested EC directors about their planned contribution to the national budget, firing out detailed questions about specific factories – demonstrating both his working knowledge of up to 48 ECs grouping 1,750 work centres, and the diversity of production within MININD, from petroleum to wheat: ‘How many hours was Petrol stopped? ... Factory 203-9, why did it stop? ... How many thousands of flour sacks did La Molina bag from here? How many tons of wheat were milled?’³⁶ From then on, he announced, all EC directors would be examined on their knowledge of the main indices in the bimonthly meetings of the ministry.

The next meeting took place in March 1963, a gap of five months which included the Cuban Missile Crisis of October 1962. EC directors were called to the front row and given an exam with 15 specific questions about production within their enterprise to answer from memory.³⁷ Edison Velázquez remembered the day clearly. He was the director of the EC of Nickel and had just arrived in Havana from Oriente province in the easternmost part of the island ‘with a head full of problems about all the technicians who were leaving. That day they gave me the exam but I didn’t do it. They graded me zero.’³⁸ From then on, however, every bimonthly ministry meeting began with the test, and Velázquez scored 65–70 per cent: ‘The tests were checked by a group of people, so for instance, if I said one ton of nickel cost \$23,000, they might say, “You’re making it up, it costs \$25,000.” They would grade you and you had to get over 60 per cent.’³⁹ Three failures meant automatic replacement, although this never actually occurred.

In addition to knowing the numbers, Guevara said it was essential that EC directors visit the workplaces to observe first-hand what the numbers don’t reveal, to keep a close connection with the masses and learn from them.⁴⁰ All EC directors were obliged to visit and inspect one workplace every two weeks or have a day’s pay docked for incompleteness. For the ministry Management Council this had to be done weekly. Juan Borroto, head of the Department of Inspection, recalled that at one point when several directors were falling behind in this task, MININD’s Vice Minister of the Economy cantankerously remarked: ‘Let them dock me one month’ – which is exactly what Guevara did when he heard about the comment.⁴¹ Guevara insisted on discipline and was known to make an example of his closest colleagues.

On one of Guevara's own weekly factory visits, he came across an administrator of a textile factory who displayed a wall full of daily production graphs. But when asked why the charts rose or fell, the administrator did not know. 'We are characterised by the total lack of analysis at all levels', Guevara complained.⁴² He referred to Alfredo Menéndez, who before 1959 was an analyst in the Cuban Institute for the Stabilisation of Sugar and who, as director of the EC of Sugar, by far the largest sector within MININD, did less economic analysis than previously: 'This is a serious contradiction. And Sugar is one of the enterprises here that does carry out analysis and that can present data and use it rationally based on experience.'⁴³ Unless the data collected were analysed it would not serve to locate bottlenecks and identify deficiencies, which could then be tackled to improve efficiency and lower costs: 'it is not the same to analyse production on day ten as to analyse it on day 25 when almost another month has passed with setbacks'.⁴⁴

Financial discipline meant submitting adequately analysed reports on time. As *compañeros* gained some accountancy training, 'economic heads' were placed in each EC to work alongside the director. They submitted accounts, mostly manual, signed and approved by the director, to the Vice Minister of the Economy by the fifth day of the month following operations. Guevara himself analysed these reports and, when necessary, called economic heads and directors for a discussion of the economic and financial state of the enterprise, to render accounts and provide information about the balances.

In October 1963, Guevara commented sardonically that the EC of Cigarettes had passed into the annals of accounting history: 'for the first time in the history of accounting, an enterprise submitted its financial record, not with a certification that the data is exhaustive, but rather a postscript that the data could not be relied on.' Meanwhile, the 'gentlemen' of the EC of Beer and Malt had honoured the pre-revolutionary tradition of hiding profits, apparently adjusting the inventory by 4 million pesos. All those responsible for financial indiscipline would be removed, he warned, even if no economic heads were left, as in the earliest stage of the Revolution. What was more, he added, the EC directors were directly responsible for this financial indiscipline and would face a sanction along with the economics heads.⁴⁵ Responding to one director's request that a seminar be organised to teach them about the BFS, Guevara replied curtly: 'It is useless to hold a seminar about the Budgetary Finance System if the statistical and financial apparatus of the ministry don't function, because at the base of the BFS is knowledge of all data to facilitate centralised management.'⁴⁶

By 1964, the problems with statistics and accounting had been largely overcome and a Department of Statistics had been established in MININD. Figueras began work on an input-output matrix with two specialists, Zoila

Aleida González Maicas and Enrique González Romero. They collated purchases and sales information from the ECs and designed a matrix using one of only two computers existing in Cuba, imported by Guevara. This gave them an overview of the global balance of the ministry which facilitated improvements in efficiency.⁴⁷ An article was published in *Nuestra Industria Economía*, with a follow-up article analysing the results eight months later.⁴⁸

Guevara also took industrial problems to his maths teacher, Salvador Vilaseca, in the hope of finding a mathematical solution. Vilaseca recorded that the problems were so complex that ‘sometimes I didn’t even understand the problem and he didn’t know how to explain it to me. We both set to work seeing if we could do something, but we couldn’t. Other times we did resolve things that had a mathematical solution.’⁴⁹

INVENTORIES

An excessive inventory is money dormant, whether it consists of raw materials, or the finished product; either of these is a burden on the enterprise. Our funds are contained in such a way that they cannot have a huge inventory.

Che Guevara⁵⁰

In *Cuba Socialista*, every workplace should be considered as one section within a big factory which was the Cuban nation. This approach was adopted by Guevara in MININD, where production units were grouped into ECs and operated on a planned budget, without their own resources. The law of value, he argued, could not operate in exchange between state-owned production units, because there was no change in ownership. Likewise, one factory’s excess inventory was not merely an individual surplus but, rather, it reflected a bad distribution of resources within a large and complex, but unified system of production. Consequently, Guevara insisted on the tight control of inventories, from raw materials and other inputs to capital goods, spare parts and final products.

Here again, Guevara appreciated the efficiency of the inventory control procedures implemented by the advanced US corporations in Cuba. At the Nícaro nickel mine in Oriente, the US managers had put a card in each warehouse listing the parts stored there and the quantity consumed each year. Not only did this prevent the pilfering of supplies, it also provided an accessible record of stocks available so that replacement orders could be placed in advance, facilitating an appropriate balance between necessary reserves and dead capital. It was the best way to maximise the capital without wasting any resources.

Inventory control became more necessary after the imposition of the US blockade. At the point of nationalisation, most industries had very low

inventories, because 95 per cent of Cuba's capital goods and 100 per cent of spare parts came from the US.⁵¹ Replacements, inputs or maintenance services ordered by phone would arrive in two days. As US supplies dried up and ran out, Cuba had to turn much further a field to buy replacements – a process further complicated by the need to operate through third parties in capitalist countries so that trade could be conducted under the radar of the US government, which pressured its allies to enforce the blockade. Velázquez, explained: 'If you needed to order a spare part from England that could take six months to arrive in Cuba from the time you first requested it – you couldn't forget about these parts.'⁵² It was vital to keep on top of inventories to avoid paralyses of production by sudden shortages. On the other hand, if you brought excessive quantities, whether it was primary materials or finished products, they would deteriorate just laying around in the warehouse: 'Che saw the example of the capitalists, how well organised their warehouses were. Access to them was limited, they were managed by specialists who knew exactly what was there and when you requested a spare part knew where to find it quickly.'⁵³

The system of card-controlled inventories was adopted in MININD so that 'even the toilets had a card recording control of inventories and basic means', according to Yolanda Fernández Hernández, who worked on investment programming in MININD.⁵⁴ Planning and construction of new investments always began with the warehouse, establishing control of the inventories and capital goods, until the factory could begin production. 'A screw's gone missing, where is it? You must know what you have to produce with', explained Fernández Hernández.⁵⁵

When the socialist bloc stepped into the breach left by the US, three new challenges arose. First, they often used different technologies. Second, storage facilities were inadequate for the huge shipments arriving from the socialist countries. And third, replacement parts had to be included in the annual plan. BFS enterprises could never spend beyond the budgets they had agreed. Technicians had to know the maximum and the minimum that an inventory could include, depending on how long each piece of equipment had been in use, when it was due for replacement, how long it took to arrive, and so on. Velázquez said: 'This was necessary in a planned economy in which everything started with controlling the inventories.'⁵⁶

In the EC of Nickel, Velázquez affirmed, full inventory control was established, with a head of production for every warehouse who gave him a monthly report on the state of the inventories. Other specialists analysed how long the inventory would last and investigated whenever a product was being run down to discover why, thus avoiding both production shocks and the stock piling of dead capital: 'Given the number of warehouses, if there

was dead capital in each warehouse it would add up to millions of peso worth throughout the country.⁵⁷ Guevara himself assessed the progress of all the ECs via analyses of their costs. Velázquez said:

The cost is like gossip ... If you leave electrical equipment working unnecessarily because of negligence, this shows in the costs ... Che knew what was happening. In these meetings he would say 'The inventories have gone up in nickel mining' ... He asked me once 'How did your costs go up?' and I told him that I had spent extra money on manpower to fix some breakages and I had to pay for extra work shifts for ten days. I had to know that. He knew that as well because the inventories were an element of economic analysis and he could see if you had paid more in salary costs.⁵⁸

On his weekly factory visits, Guevara always inspected the warehouses. Francisco Buron Seña, a head of audits in MININD, emphasised the significance of this example: 'some administrators, perhaps because they had been recently designated, had not even visited the warehouses. The fact that Che inspected there was a lesson for them about the importance of empirical checks as an instrument of management; that you cannot just base yourself on reports.'⁵⁹

Rosario Cueto was personal assistant to the Vice Minister of Basic Industry, Arturo Guzmán Pascual. She used a card index to record the inventories of basic means of production for each EC: 'this allowed us to act quickly to avoid a crisis in supplies to industry'.⁶⁰ Every month, Cueto travelled to Nícaro nickel mine, with either Guzmán or Guevara, to participate in the management council meeting. On one occasion, Guevara became furious when he saw that accounting adjustments had been made on the inventories.

I had seen him irritated before, but never like that. He spent an hour explaining why adjustments could not be accepted, especially when things were missing, pointing out the economic implications that this could have. It could hide thieving, corruption, indicating people had an interest in falsifying information. This made it possible to conceal crimes, he said ... He asked who had authorised the adjustments but the person who was responsible wasn't there which made him more cross.⁶¹

In December 1963, Guevara revealed that during annual evaluations of each EC, finding anomalies in the inventories was common. This was the result of financial indiscipline and thieving. Guevara took a strong line to deter both. Mistakes were accepted, but not thieving: 'It is one thing to put your foot in it,' he said 'but another to dip your hand in the till.'⁶²

People have been imprisoned in the last two months for dipping their hands in the till. The weak point is the raw materials warehouses and above all spare parts in the big enterprises, it is a weak point where the nation's money goes off in private hands ... misappropriation of funds caused by the lack of control and discipline.⁶³

Nine months later, he repeated the complaint and gave a 'final warning' that the ministry would take 'drastic measures' to combat financial indiscipline, particularly the adjustment of inventories, which created the opportunity for stealing. When EC directors found problems in their inventories they were instructed to inform the ministry, so that the General Department of Supervision could send auditors to investigate and resolve discrepancies. But if they tried to hide problems, allowing or instructing their economic heads to adjust the accounts to avoid violating ministry regulations on inventories, the director would be held responsible: 'I don't know whether it is due to a complete lack of knowledge of the elemental rules of accounting, or if it is with the collusion of directors, but I know that it happens and it is serious.'⁶⁴ Miguel Domínguez, director of the EC of Soaps and Perfumes, which had the best record on inventories, was instructed to set up a team of advisors to assist other directors. Guevara noted that raw materials inventories had grown significantly, but many resources were not included in the plan and were wasted.⁶⁵ By the end of 1964, MININD's inventory was 31,078,400 pesos.⁶⁶

This approach to economic analysis – data collection and reports, backed up by on site investigations – was exemplified in the apparatus established for supervision and inspection, functions which Guevara had prioritised since he took charge of Cuban industry.

SUPERVISION AND INSPECTION

When the Department of Industrialisation had been created and a group of founding *compañeros* were working on the structure of the organisation, Borrego drew the organigram on a board, inserting some subsections under the head of the department. Guevara made a correction – the first office under him should be for supervision and control: 'This man should be my eyes and ears to allow me to see what I cannot see and to hear what I cannot hear.'⁶⁷ From the beginning of his work Cuban industry, Guevara set up the Section of Inspection, Investigation and Audits. Velázquez was put in charge:

We verified everything, we investigated indiscipline and anomalies. We audited the enterprises systematically and the most important factories. If there were problems with the audit we did an inspection. The inspection went into detail, consulted with

the trade unions, the administrator, the party and the revolutionary organisations, examining their relationship with the administration.⁶⁸

Guevara believed that the head of this section had to have a flawless record, so when Velázquez's moral integrity came under question he was replaced by Juan Borroto.⁶⁹ The Section had 100 staff by February 1961, when it was renamed the Department of Supervision within the newly founded MININD. Initially, Guevara had analysed all the investigation reports personally. Reflecting back, he said: 'it was an endless job, exhausting, to read a multitude of inspections and some audits that generally reflected a permanently chaotic state of accounting without any action being taken to remedy it'.⁷⁰ Guevara then discussed the reports with those responsible; usually, as Borrego recalled, late at night, 'which allowed him to fully concentrate on the analysis and to take pertinent decisions without the urgency of other daily tasks'.⁷¹ Alexis Codina confirmed this from his own experience as head of accounts in a bakery in 1961. The first time he met Guevara in person was at 1am. He was at work catching up with the accounts when the minister appeared knocking at the door and asked for a tour of the bakery: 'He overwhelmed me with questions about the costs and accounting', recalled Codina. The following year, having been promoted to economic head in the EC of Flour, Codina was summoned by the director to grab his paperwork, and go for a meeting with Guevara at 3am. On entering he saw Guevara standing with the top draw of a filing cabinet pulled out, leaning on the sharp metal corner, reading a report which he had to discuss at 8am.

He explained that if he sat on the armchair he would fall asleep, which is why he made himself uncomfortable. He had the financial records of our enterprise in front of him and started asking me questions, for example about the sales ledger which registers what clients have ordered but not paid for. These were subdivided into state sector, rural sector and the private sector. Our accounts sale ledger for the private sector had increased. Che asked me who had authorised me to finance the private sector, as I was giving primary materials to a sector that was not paying for them ... I confessed that I had not made that type of analysis.⁷²

Later, the task of checking inspection reports passed to Borrego as first vice minister. Then through 1962–63, the supervisory procedures were decentralised with an Office of Supervision in each EC, plus five provincial offices which reported directly to the ministry. In early 1963, Borroto reported on problems with the supervision apparatus, partly resulting from a lack of impartiality of individuals in reporting on their own enterprises. Guevara realised that supervisors must be outside of administrative functions to ensure objectivity

and remove all vested interests: 'I could not be called on to inspect the Ministry of Industries; it's too difficult, it's not logical or it's not correct. Because as honest as I might be, I will present mistakes moulded by my own decisions as correct ... I cannot be the one to analyse them.'⁷³

Subsequently, in summer 1964, the recentralisation of supervision personnel and resources at ministry level was announced. The degree of centralisation was determined in a flexible way in relation to the capacity for control at lower levels. Guevara said: 'We are at a level of development in which we cannot permit a return to the errors that were perfectly permissible in 1961 but cannot be permitted now.'⁷⁴ Renamed the General Office of Supervision, it was divided into three departments – inspection, auditing and investigation – and employed 600 workers nationally, including office personnel who organised the programme of work. Their responsibilities involved evaluations of investment projects, three-monthly analyses of all 48 ECs to assess fulfilment of the ministry's annual tasks – four or five priority areas for improvement highlighted in the annual review – detailed reports submitted as part of each EC's annual report, the compilation of special information requested by Guevara, and checks and evaluations requested by the EC directors themselves.

The Audit Department dealt with the financial state of the enterprises. The Inspection Department checked equipment, maintenance and the work of personnel, including the EC directors. The Investigation Department carried out more profound analyses which, in Guevara's view, had political importance. It was responsible for responding to workers' complaints and opinions. The investigatory apparatus ensured that management were conscientious about their own behaviour and treatment of others, in the knowledge that complaints would be thoroughly investigated: 'Guevara operated with the principle of constant doubt', explained Borroto, so everything had to be investigated and verified: 'Che knew he had a team which could verify everything.'⁷⁵

Nonetheless, Borroto himself admitted defying one directive when, in the first months after MININD was created, Guevara announced that directors and vice ministers with a ministry car were expected not only to pay for their petrol when driving in Havana, but also to leave their cars behind at night. Borroto was instructed to check that this was enforced. Three months later, however, when Guevara asked Borroto whether this directive was being met, Borroto told him he had not checked because he thought this ruling was unfair. Like Guevara, the ministry workers worked till the small hours and it was unfair to expect them to wait for a bus to get home at 2am or 3am when they had to return at 8am the next day. Guevara agreed, and the directive was dropped.⁷⁶

Guevara told directors that taking people or reports on trust was a reflection of mental or spiritual laziness or of subjectivity – the tendency to see everyone

through rose-coloured spectacles without bothering to analyse their work in depth: 'You have three sets of eyes working to the same ends, four with your own: the eyes of the ministry's supervision, the eyes of the provincial delegations' supervision and the eyes of the supervision in your own enterprise ... Weaknesses are discovered through supervision.'⁷⁷

By June 1964, when the *Manual* was published, factory administrators were expected to have daily production reports in their hands within the first four hours of the day. Every department and sub-section, all the offices of quality control, work and salaries, planning, movement of materials and products, personnel, heads of production, administrators and economic heads, should report deviations from the economic-technical plan to the EC director on a daily basis. This was described as a systematic type of preventive control.⁷⁸ The *Manual* stated: 'With the intention of overcoming the deficiencies observed in inspection reports and to obtain the benefits which can come from them, it has been circulated to all directors of the branches of production and Consolidated Enterprises that the best use of these investigations is through their discussion.'⁷⁹ Velázquez confirmed that in the huge nickel mines of Nícaro and Moa which he directed, this mechanism was in place:

In Nícaro the production heads bought me a report in the morning and I had a board meeting with the 40 engineers to see if there were any problems. I might say, for example, right we need two more shifts to resolve this because there is an accumulation of production in one point. Prevention means checking during the process, not waiting to discover problems at the end of the day. You can't wait until the end. The end is an autopsy, the corpse is dead. I supervised one administrator at Nícaro and another at Moa. I often said to them 'Gve me a production report every four or eight hours.' And I had to inform the ministry of any problems.⁸⁰

The ministry had advanced significantly in four tumultuous years – from the chaos of retrieving flour at the docks to an obligation to submit production reports within the first four hours of the working day. Clearly, supervision and inspection were vital instruments in the administrative control of the economy which was integral to the BFS. It provided an alternative mechanism to the financial compulsion of the profit motive inherent in the AFS for ensuring financial discipline and accountability, and to focus workers on reducing costs, improving production and efficiency. Guevara has been caricatured as idealist for his vision of sacrifice and commitment to the Revolution. However, the role he created for administrative controls, checks and balances, undermines that characterisation. Human beings were in the process of transformation along with their society, and mechanisms were necessary to monitor and guide their progress.

Commission of Arbitration

Like Fidel Castro, Marta Lugioyo was a lawyer in the 1950s. She joined M26J in 1955, working underground in central Cuba with Aleida March, who later married Guevara. In 1957, during Batista's dictatorship, she became a judge and used her position as a cover to help the revolutionary movement. In 1961, she joined MININD as office manager in the Vice Ministry of Light Industry, becoming a legal expert on the Commission of Arbitration which was set up in 1963: 'I worked in evaluating industrial conflicts, the problems of quality, quantity of production ... Arbitration gave legal coherence to the relations between enterprises.'⁸¹ The Commission dealt with internal disputes between the ministry's ECs relating to quality, quantity, price (as an accounting measure), delivery dates, infractions of legal norms or regulations and incompleteness of agreements and contracts. Arbitration had legal status, so was considered as a last resort when discussion and negotiation had broken down.

Arbitration was under Guevara's control and Lugioyo reported directly to him and Santiago Rieras, Vice Minister of the Economy. It was soon expanded to mediate in contractual relations between MININD and other institutions on the island, which also set up their own Commissions of Arbitration. When the Ministry of Foreign Trade (MINCEX) complained about the quality of goods produced by MININD factories for export, it was Arbitration's task to investigate and resolve the problems. They intervened on the question of salaries and worked closely with experts on product specifications and presentation – 'research and marketing' – establishing standards to improve quality without raising costs. Work centres or ECs were fined for non-completion of contracts. Lugioyo pointed out that the legal experts working in Arbitration required a comprehensive understanding of the BFS.

Some institutions didn't understand Arbitration; nor that it was necessary to fine people for non-completion of contracts. INRA [National Institute of Agrarian Reform] and MINCEX defended the Auto-Financing System, so they couldn't understand that you would punish someone in relation to the delivery of products. There were also problems with JUCEPLAN [Central Planning Board]. This was all due to the differences in regards to the economic system.⁸²

Under the AFS, exchange between enterprises and ministries was resolved by demand and supply market mechanisms – which Guevara called 'financial compulsion'. The BFS aimed to replace 'control by the peso' with administrative compulsion so that exchange was controlled by contractual agreements. The Commission of Arbitration was a vital tool in this system; it enforced the primacy of the contract and central plan. Monetary fines were imposed by Arbitration, but they were enforced *a posteriori* for failure to honour admin-

istrative contracts. They were not an expression of market forces influencing production decisions or the exchange of goods.

In 1963 when it was set up, Arbitration initiated 104 proceedings, a third relating to the failure of one enterprise to transfer funds to another for goods or services received – this was the method of payment under the BFS, which took the form of an accounting adjustment. One quarter were for failures to deliver supplies and the rest concerned mainly problems with quality and incompleteness of contracts. Claims rose to 237 in 1964, with 116 for non-payment, but just 13 for non-supply – suggesting that production had improved, but financial discipline was lagging behind. Incompletion of contracts rose to 81, 12 related to quality and 15 to ‘other causes’. Of those totals, internal Arbitration between MININD’s own ECs increased from 17 to 82. Proceedings enacted on behalf of MININD against INRA rose from 8 to 29 and fell against MINCEX from 42 to 39 (or from 40 per cent to 16 per cent of the total claims) – due to a lack of contracts and delivery conditions agreed between the institutions and to MININD’s failure to provide evidence of the economic damage caused by incompleteness of deliveries. MININD’s 1964 annual report concluded: ‘The use of this instrument [Arbitration] by the ministry and its dependants has been weak.’⁸³

In 1964, only 20 claims were issued against MININD, which paid 6,586,400 pesos to other institutions in fines, but received 2,821,744 pesos from other institutions, 63.5 per cent of which was for payment failure. In 1966, the Commissions in each ministry were centralised into a National Commission of Arbitration and Lugioyo was appointed onto that. MININD’s Arbitration was another body created by Guevara which was consequently adopted on a national scale. Clearly, despite its weaknesses, Arbitration had demonstrated its utility.

CONTROL MEETINGS AND ANNUAL REPORTS

Following their six-day working week, every Sunday, at the crack of dawn, ministry workers went off to sugar cane fields, factories, plants or construction sites to carry out voluntary labour until midday. Once a month after that – often without time to return home, wash and change clothes – Guevara, his vice ministers and branch directors met for a Control Meeting which started at 2pm and sometimes lasted until midnight. The Control Meetings carried out systematic analyses of problems and progress within the ECs, analysing branch by branch and focusing on their performance in relation to the plan of production. Discussion was based on statistics compiled from the previous month’s production results, ready to be analysed within the first ten days of the following month. The meetings also dealt with questions of supply,

quality, cost and sometimes investment, work and salaries. Once *compañeros* had finished discussing the industrial sector they were responsible for, they remained in the meeting, learning about the problems and achievements within each industrial sector.

MININD branches kept abreast of developments via their own weekly Management Council meetings. The branch management was lightly staffed, to avoid bureaucracy – consisting of a director, a director's assistant, an office manager, an office assistant and an advisor. The meetings were also attended by the directors of the ECs within that branch, plus a deputy who was shadowing the director.⁸⁴

In early 1961, a document called Circular 38 was issued to guide ECs on compiling an annual evaluation of their work. The analysis deepened when Circular 43 was issued. Finally, as the number of ECs rose from 40 to 48 and the Vice Ministries of Light and Basic Industry were subdivided into branches of production, the stringent Circular 90 came to life – demanding a thorough annual analysis of every aspect of each EC.

This annual undertaking for all 48 ECs was a weekly task for MININD's Management Council. Circular 90 required not just details relating to the completion of the technical-economic and financial plans for the enterprise, but also their social objectives, the state of their organisation, structure, personnel roles, and (self-) assessments of management personnel, training, perspectives and relations with the ministry management, trade unions, the party and other organisations of the masses.⁸⁵ Once complete, 100 copies of the report would be edited and produced by the EC of Graphic Arts and delivered to the ministry's Management Council a month prior to discussion. Meanwhile, Guevara named three *compañeros* to carry out an in-depth analysis of the enterprise. They had to produce an evaluation based on their own visits to that EC's workplaces, attendance at its council meetings, and checks of its economic, administrative and productive procedures. The head of the relevant branch also produced a report of the EC activities. Meanwhile, from the General Office of Supervision, Juan Borroto would send two investigators, two auditors and two inspectors to analyse the ECs; some of which, like the EC of Flour, consisted of hundreds of small entities. This process could take up to two months and included evaluations of the management personnel.⁸⁶ Finally, specialists in the appropriate area would submit an additional account analysing the enterprise. All these reports must be read before the weekly meeting of Circular 90, chaired by Guevara and including all those involved in the analysis, plus all other vice ministers and general directors. Their participation ensured that management personnel were aware of problems and progress of industrialisation as a whole.

The meeting to analyse the EC usually took four hours, but occasionally it ran over to the following day. According to Harry Villegas, Guevara checked that the ECs were focused on improving and expanding production and technology: 'You had to answer a whole set of questions about installed industrial capacity, development plans, what raw materials you had, how you would substitute imports, how relations were with the trade unions.'⁸⁷ An important aspect of Circular 90 was the appraisal of personnel. Árcos said:

In a personal way, with the spirit of constructive criticism, Che discussed the performance of each leader, first invariably asking if the evaluation had been discussed with them and their opinion about it. The enterprise reports also had criticisms of MININD (including the minister, his management apparatus and specialists) and the analysis also commented on bad decisions and deficiencies. These were analysed and suggestions made for measures to be taken or weaknesses to be overcome. And all of this had to be verified by the ministry inspectors.⁸⁸

On one occasion when the whole team went to Nícaro nickel mine for the annual report of the EC of Nickel, Guevara concluded that the report was 'brilliant' except for the lack of a spirit of self-criticism by the director, Edison Velázquez.⁸⁹

After the exhaustive analysis the nominated team of three reached final conclusions. Agreements were formalised to serve as the basis for a plan of action in the following year.⁹⁰ Arcos concluded that, 'Without doubt, this rendition of accounts and the meetings of control of production (monthly), were two of the most formidable tools that Che counted on to control this GIANT which had to be divided afterwards into five ministries.'⁹¹ Circular 90 was a scrupulous tool for scrutinising the functioning of MININD production units, as the basis for devising strategies for the rationalisation and expansion of production based on collective discussion and analysis. That inspectors, auditors and investigators, as well as vice ministers and the directors of the EC itself, carried out their own evaluations lent the process the dynamic character which kept the analysis lively and avoided bureaucracy.

INVESTMENTS

An 'investor' in MININD was the person nominated to oversee projects through conception to purchase, construction and inauguration. The investor was attached to the work centre under development but received advice, technicians and materials from the ministry. Investment proposals were agreed by the Vice Ministry of the Economy and coordinated by the Vice Ministry of Industrial Construction, headed by Ángel Gómez Trueba.

Influenced again by the control mechanisms applied in the capitalist corporations and their subsidiaries in Cuba, Guevara adapted their stringent procedures for investment to MININD: 'Che applied the same procedures; no one could carry out investments without the ministry approval',⁹² explained Velázquez. The BFS structure was conducive to centralised control of investments – because work centres did not accumulate finances of their own. They withdrew money for operational costs from one bank account and paid in all surpluses to another, which went straight to the ministry. Payments for goods exchanged were registered as debits or surpluses in the central bank accounts. BFS entities had no access to credit for decentralised investments. This did not mean that investments could not be made – on the contrary, Guevara demanded that investments were carried out to expand reproduction and he set up a Vice Ministry of Industrial Construction to oversee this work. However, projects had to be carefully analysed and included in the annual plan. Velázquez explained that the ECs' end-of-year balance included investment proposals, so directors had to find out from the technicians what was needed, provide a list and justify each element. Requests for new equipment had to detail costs – materials, labour force and collaterals like soldering – and state in which period it was planned to recoup that investment: 'The ministry decided which part of the proposal it would approve.'⁹³ In addition, the ministry could instruct ECs to carry out investment – for example, a new oven in a bakery to increase bread production. The ministry would purchase the oven and give directives to the bakery to install it.

As the responsibilities of Industrial Construction grew, it had to carry out a major investment itself – constructing a new building behind MININD to house the vice ministry, built with the help of voluntary labour by MININD employees. Industrial Construction included project managers, investors and inspectors who carried out routine checks on every investment project underway at three month intervals. Juan Borroto, head of Supervision, controlled the programme of inspections: 'I had to inspect the projects with an architectural engineer sent to me to help with this task.'⁹⁴

This expansion of Industrial Construction was accompanied by the recentralisation of investment responsibilities in 1963, following failures with decentralised investments in the previous two years. In March 1962, one director pointed out that while urgent investments had been authorised outside the plan – for example, a factory roof which was falling down – other investments had to wait until the following year. Another director complained that even after investments were approved they were delayed in normal budgetary channels.⁹⁵ Guevara instructed directors to inform him when things got stuck, so that he could get things moving – revealing MININD's organisational weakness: the indispensability of the minister's personal intervention to break bottlenecks.

The ministry was being reorganised to solve 'terrible bureaucratic obstacles', Guevara said. 'We will give the authority to those who should have it; we need to move things on with a lever of immediate action that you are not using gentlemen. That investments are stopped is truly bad.'⁹⁶ Ramírez, director of the EC of Cement, explained how investment bottlenecks in other enterprises affected them, because their lack of storage facilities meant production was halted until the cement could be removed from the warehouses to make room for more. This upset the factory workers, he said, 'who are seeing daily that their production is below the goal they discussed, programmed and struggled for' in determining their annual plan.⁹⁷ Guevara reacted with fury:

That people don't take this to heart – that the ministry cannot be shaken is outrageous. It is a sign of apathy, of bureaucracy, of the lack of sensitivity ... Gentleman, this cannot be. You have to get stuck in relentlessly. It is everyone's obligation ... you cannot leave the nation's economy in the hands of one man. This cannot be my decision; it has to be everyone's responsibility. I can accept my due, twenty times over, for having once forgotten a problem, but this is an obligation of the entire ministry. Cement cannot be stopped; investment can't be stopped, sirs ... Am I a magician? Are there not 20, 60, 100 Ches here that have the same concerns every day, that go out, that shout, that stamp their feet at all levels ... We cannot progress, we cannot drive this with energy if we do not take resolute decisions, everyday, if we don't get bitter every time things don't happen.⁹⁸

In summer 1962, Guevara complained that the level of investments in MININD was 'scandalously low', and blamed Industrial Construction, JUCEPLAN and the government for permitting these errors: 'So the criticism falls on me from all sides: for the government, for JUCEPLAN, for the Industrial Construction', he concluded, being responsible at all three levels. Part of the problem, admitted Guevara, was the overestimation of the growth projection – initially foreseen at 20 per cent, subsequently reduced to 15 per cent and then to 9.8 per cent. But the real average growth rate that year was just 1 per cent. In fact, growth was higher than that in all MININD's ECs, but the 29 per cent fall in sugar production distorted the results, given that sugar accounted for a quarter of the ministry's production.⁹⁹ Velázquez explained that directors did not request funds for investment because they did not want to take risks, but this held back economic expansion which was impossible without investments: 'There was a lack of vision, but Che was a visionary so he insisted on investment.'¹⁰⁰

By September 1962, MININD was meeting production plans, but not growing. Guevara declared that investment was the ministry's greatest failure: 'Investment secures future production: the more or less long term future. Maintenance assures production for tomorrow ... Everywhere we visit we find

an absolute neglect of investments.¹⁰¹ In response to these failings, investment functions would be centralised so that decisions would be made with objectivity, not decentralised at the unit level where surpluses are sometimes used in an irrational way.¹⁰²

In 1963, investment was one of the ministry's four annual priorities. Guevara urged directors to make their investment proposals concrete and realistic citing, as a negative example, the EC of Pharmaceuticals, which had begun ten investments simultaneously without guarantees, endangering all the production plans. Projects had to be monitored, Guevara said, complaining that: 'Even today we haven't found a method of pushing the investor who is behind to focus on this task. We have a number of investors who are now dedicated to centralised works.'¹⁰³ The investor had to be linked to, and work with the enterprise on the project. Decentralised control of investments was preferable, he said, but centralisation was necessary because of failures at lower levels.¹⁰⁴ MININD's budget was below what had been requested from JUCEPLAN. As well as representing MININD, Guevara was a member of JUCEPLAN, and he had over-compensated for this duality to avoid the appearance of a conflict of interest: 'I developed one of these petit-bourgeois complexes we still have, not acting with sufficient energy to defend the needs of Industries, so that no-one would think that I defended the needs of the Ministry of Industries from my position in JUCEPLAN.' Meanwhile, he said, money was spent on unimportant things instead of industry, like for example, \$50,000 which was spent on dancers, instead of being used to ensure that a factory functioned.¹⁰⁵

Following the centralisation of investment projects in 1963, the situation improved. In 1964 MININD's planned investments totalled 142 million pesos, of which 50 per cent went on equipment, 27 per cent on construction, 13 per cent on assembly and 10 per cent on other costs.¹⁰⁶ By 31 December 1964 there had been a 78 per cent completion of the annual plan of investments. Of the incomplete investment projects, 44 per cent of total expenditure was on imported equipment, compared to just 1.2 per cent on domestic equipment – demonstrating Cuba's reliance on foreign trade for the means of production. A further 136 million pesos of investments was planned for 1965 involving 128 projects.¹⁰⁷

In December 1964, Guevara complained about bad investments in backward technology purchased in 1960 which was still not operational. New investments, he insisted, must consider world productivity.¹⁰⁸ Investment was to be a priority task for 1965, and would be reorganised so that the investor would come from the EC which would operate the new plant and take more responsibility for the actual work, visiting it frequently: 'not this absurd separation there is today between the intellectual who puts it together in an air-conditioned office' – far removed from the natural problems which arise in the execution of

a project in the countryside, for example.¹⁰⁹ New investments should take no more than one year to complete. These measures would help ensure continuity in the work if, for example, a technician adjusts the specifications or a new technician takes over and completely changes the plans and projections during the investment process.¹¹⁰ The investor's tasks also involved coordinating the training of personnel to operate new equipment. The administrator of the work centre under development had to provide a weekly report on every aspect of the project's progress.¹¹¹

From 1961 to 1965, Guevara battled through the major obstacles – the lack of financial resources, and of a medium- or long-term vision for expanded reproduction and the lack of an investment culture among those responsible for managing production at base level – to ensure that an investment apparatus was integrated into MININD as part of the BFS. The challenge lay in creating mechanisms to foster an investment culture which did not rely on capitalist levers to create an 'entrepreneurial spirit' based on competition and private gain.

QUALITY CONTROL

One of the first steps taken by Che was to contact the best known Cuban publicists and designers and ask for their collaboration in organising the marketing of the socialist industry in the 1960s. The difference was that the new department set up in the ministry for these ends adopted the name Study of Products.

Orlando Borrego Díaz¹¹²

'Quality is respect for the people'¹¹³ – this slogan was adopted by Guevara to insist that MININD work centres focus on the quality of the goods produced. A Department of Norms, Metrology and Quality Control and a Department for the Study of Products were set up to respond to the public demand for quality. Given the absence of market forces, controlling quality was a vital element in the apparatus of administrative control in the BFS – an integral part of Guevara's conception of work as a social duty.

Guevara spoke publicly about deficiencies in the quality of MININD products at the National Production Conference which took place over two days in late August 1961 after food shortages had hit the country in the spring. Attended by 3,500 representatives from government and from economic and revolutionary organisations, it was broadcast live to the population by radio and television. Officials from different sectors of the economy gave long reports analysing difficulties, explaining the measures taken and projecting future economic growth.¹¹⁴ Guevara explained problems which had occurred as a direct result of the US blockade – problems with supply, technology transfers and the lower quality of imports arriving from the socialist countries. For example, Coca-Cola

was one of the most popular drinks in Cuba, but today it tastes like cough syrup. It has seven, eight, or nine – I don't remember how many – ingredients, some of which are secret. This was one of those secrets held by the American factories: ingredients arrive with the label 'xz-29' and all the Cuban technician has to know is that he must put a certain amount into the mechanism in which the components are mixed, and out comes ordinary Coca-Cola with the taste we all know. It was necessary to do much investigation and a substitute has been found, but sometimes we have to eliminate an ingredient that we can't get and can't make.¹¹⁵

He also warned hoarders not to store the new toothpaste as within one month it turned as hard as stone. The fault for this lay, not just with the suppliers of the raw material – bicalcium sulphate – but also with ministry personnel because, while reserves of the old toothpaste remained, 'The measures urgently required were not taken.'¹¹⁶ Guevara refused to accept the US blockade as an excuse for administrative failures – the lack of controls, foresight and planning.

In January 1962, Secretary of the MININD's Management Council, Juan Valdés Gravalosa, announced that the quality of the ministry's products had declined – and that this had political implications as the population was dissatisfied.¹¹⁷ Guevara said this could not be accepted:

Increasing production for the sake of it and throwing quality out the window is absurd. If we make two million pairs of shoes and we sell them at the same price and in four days the shoes are useless, we have gained nothing, because the shoe has to complete a social function and that is our main duty, to produce so that people can dress, they can eat, they can live in society.¹¹⁸

As director of the Light Mechanics branch, in one control meeting, Arcos had to respond to complaints about the low quality of a cockroach insecticide produced in one of many tiny workshops grouped together under the EC of Local Industries. Arcos began blaming the lack of concentrated insecticide available, the old and broken equipment, and so on, to which Guevara responded:

These arguments are all very well, but the sad reality is that this product to kill cockroaches is coming out with terrible quality, and I am receiving many complaints from all over. I think we will have to produce this with a label that explains that to kill cockroaches we have to tie them together, submerge them in a bottle of insecticide ... so that if they don't die from the poisoning, they will die from drowning.¹¹⁹

He instructed directors to stop production altogether if minimum quality standards could not be achieved. It was worse to deceive the public with goods which did not fulfil their social functions than to do without them.

Guevara met regularly with the workers from the Office of Norms, Metrology and Quality Control and the Office of the Study of Products to discuss controls and new products being developed. Borrego recalled Guevara's reply when the director of the EC of Textiles asked for his opinion of a new print design for women's clothes:

Do you believe that I should be in charge of deciding how the women of this country should dress? I refuse to give my opinion about this design. It is up to the specialists and designers to decide this issue. The worst thing that could happen to the women in Cuba is that a minister decides what clothes they wear. If I say that I like the colour red, does that mean that all the women should go around dressed in red?¹²⁰

By May 1964, Guevara announced that MININD had progressed beyond the stage of prioritising production alone – directors must now focus on quality. On a recent trip to Czechoslovakia, he said, he had passed through Switzerland and France, where he was impressed by

the enormous respect there is for quality in the capitalist countries, which is reflected in the market. Czechoslovakia is perhaps one of the countries which maintains higher quality within the socialist system. But the difference with Switzerland, for example, is extraordinarily marked. Of course, at the same time in Switzerland you immediately see all the blights of capitalism, but I am not interested right now in referring to the blights of capitalism which we all know; the important thing is the issue of quality.¹²¹

There were still two obstacles which damaged quality in production: first, problems in obtaining materials, because of the blockade and other material constraints, and second, a lack of discipline, with too much focus on quantity at the expense of quality. He reeled off examples of faulty goods, showing samples – a trouser zip that did not close, an ugly doll for a child, shoes held together with just two nails, bad-quality shampoo, hair lotion and blusher – all sold at a profit. Quality norms were being implemented in pilot factories, he announced, and warned that the low quality of raw materials could not excuse the failure to prioritise quality control.¹²²

Capitalist competition served to regulate and enhance quality. In Cuba, planning had replaced competition and consumer choice was no longer a controlling mechanism. The control apparatus was therefore vital. The *Manual* stated: 'Buyers acquire what is sold because they have money and they do not find anything better; or worse, obliged by the circumstances they acquire an item which is regular or bad, but for the price of one that is good. This is immoral and cannot be permitted in a socialist country.'¹²³ Existing quality control was failing and had caused economic losses for

the nation. To resolve this, a worker was nominated in each workplace to take responsibility for maintaining the quality standards determined by the economic-technical plan.¹²⁴

Guevara's emphasis on quality control was linked to other concepts in BFS – the aspiration to use the most advanced technology, the conviction that socialism should be a superior mode of production to capitalism, more efficient, more productive, and that human beings must be at the centre of development. Under socialism, production supplies use-values to satisfy the material and spiritual needs of the population – not exchange-values, production motivated by profit. As with other areas, the challenge was to find administrative mechanisms of control, to substitute market forces.

Model enterprise

By autumn 1964, Guevara pronounced that the capacity for data analysis in MININD had improved to the point where it could be called statistics but not to enough to constitute real economic or technological analysis. A small group of Advisors was set up, led by Valdés Gravalosa, to improve the MININD structure, study 'the problems of socialism' and address tasks emanating from the weekly Management Council meetings, of which Valdés Gravalosa was secretary.¹²⁵ The rest of the team were Alberto Mora (one of Guevara's main opponents in the Great Debate on socialist transition), Carlos Franco Canillas, Evelio Horta and Harold H. Anders who, as head of the Office of Organisation, was already studying the refinement of methodology and organisation in MININD. Meanwhile, Guevara declared that specialists in industrial engineering, maths, linear programming and operational calculus would give integral and concrete guidance to the ministry's ECs: 'what's needed is a stronger central apparatus that really can guide and lead the enterprises and the restructuring of key levels of the ministry so that internal bottlenecks in information don't occur and decisions aren't impeded because of failures in the method of communication'.¹²⁶

The Advisors' longer-term project was to study the optimal conditions for an enterprise, its functions, organisation, and administrative principles. In April 1965, they completed a manuscript called *Report on the Elements Required to Create a Model Industrial Enterprise and the Methods of Work that Should be Applied in Distinct Areas of Activity*. The prologue stated: 'The present work attempts to outline the functions and methods that a Consolidated Enterprise should use to reach a grade of efficiency that will serve as a model for all. The level of efficiency attainable is, naturally, intimately linked to the existing organisational and economic conditions in the country.'¹²⁷ The manuscript divided the work of a Model Industrial Enterprise into four areas – economic, technical-productive, administrative, and those related to the director. It was

finished just days before Guevara left Cuba for his secret military intervention in the Congo, and Guevara sent one of his bodyguards to accompany Valdés Gravalosa to the printers to have eight copies produced in book format.¹²⁸

Once Guevara left the country, no more copies of the book were ever printed, so the Model was never circulated or applied. It is not clear whether Guevara intended it to serve as an equivalent to the administrators' *Manual* for the directors of ECs, but it contained a comparable mix of management theory with practical guidelines for overseeing the factories under each EC's jurisdiction – outlining procedures for factory visits, daily reports, coordination in planning, maintenance, contracts for product delivery, arbitration, quality control, storage and inventory control, investment, accounts and audits, and so on. Four years into his work as Minister of Industries, Guevara had already accumulated the experience necessary to formulate a paradigm of the optimal conditions and organisational principles of an EC in the transition to socialism.

CONCLUSION

The BFS began as an administrative measure to deal with the situation created by the nationalisation of industry. Centralising the funds of all workplaces and controlling them from the Ministry according to political-economic objectives was the first step towards implementing administrative control of industry in Cuba. Centralising administrative and technical personnel meant that the few experts available could be allocated as necessary to fulfil production priorities. Guevara's study of Marx, particularly *Capital*, forged his conviction that it was necessary to undermine the operation of the law of value and replace capitalist mechanisms with purely administrative ones. Many of these mechanisms he found in his study of the managerial and accounting operations of the highly productive and efficient capitalist corporations which provided useful control mechanisms and procedures that could be adapted to a centrally planned economy.

Guevara constantly searched for the appropriate levers to implement administrative control with the aim of both raising productivity and efficiency, and without relying on capitalist categories in the transition to socialism. The first obstacle was the absence of an economic culture, elementary statistical knowledge or even a recognition of the importance of data collection in the production units. However, even while Guevara battled for administrators to achieve basic numerical literacy, he was already introducing computer-based input–output matrices and experimenting with the possibilities of the automation of national income accounting. Guevara's vision was of *Cuba Socialista* as a single factory operating under what today is known as Just

in Time techniques to achieve the greatest possible efficiency, via rational organisation, maximum returns on investments and a focus on quality. Unlike the capitalist corporations, however, production in Cuba would be determined by a plan, democratically formulated at the production base by the workers, in the interest of social need, not private profit. It would be controlled not by cut throat competition, but by cooperation, consultation and administrative measures. In addition, the automated techniques, so generalised today, were in the early stages of development in the 1960s, even in the most advanced countries. Progress was inevitably limited.

Nonetheless, Guevara worked towards a model of economic analysis in real time, imposing this vision on his colleagues. Production problems must be detected immediately and measures taken to overcome them. He surrounded himself with experts, determined to harness their knowledge regardless of their ideological position. Administrative control ensured the primacy of planning, undermining the law of value in the transition to socialism; supervision was a tool to monitor and enforce this; investment was a necessary precondition to expand production, improve productivity and efficiency. Without this apparatus, the BFS would have had no meaning.

6

Collectivising Production and Workers' Participation

In October 1961, eight months into his life as Minister of Industries, Guevara stood before the entire workforce and spoke in candid terms about problems within their headquarters and with his own leadership methods. His deputy, Orlando Borrego, recalled: 'the Minister submitted himself to such extensive self-criticism that we were all surprised'.¹ The meeting was organised as part of a training programme initiative to collectively and critically analyse the work of the Ministry of Industries (MININD) and find ways of improving it.

Everyone knew, said Guevara, that the position of minister was assigned as just one new responsibility to those who had already accomplished diverse tasks as part of their revolutionary duty. In his case, however, the problem was that, with endless and overwhelming responsibilities, he had transferred to his ministerial work an executive method of organisation vital in the guerrilla campaign – treating people as soldiers, commanding strict discipline and a lack of discussion. So great were the goals aspired to that, little by little, daily reality was forgotten. This mistake had occurred to Guevara after listening to Fidel Castro conversing with some youngsters. He remarked on this 'wonderful quality' – Fidel's capacity to get close to the people and establish direct contact with the masses. In comparison, he admitted: 'I do not know a single cabaret, or a cinema, or a beach ... practically never have I been in a family home in Havana, I don't know how the Cuban people live, I only know statistics, numbers or summaries' He assured the workers that measures would be taken to make MININD more humane, 'so that they feel part of a great collective effort that the nation must make and so we can be as integrated as possible in making this effort, every one with their own varied way of thinking, and with their own varied convictions, but trying to incorporate themselves into work that is alive'.² This did not mean returning to the empiricism of the earliest stage of the Revolution, he said, but finding a balance between practical

knowledge and direct communication, on the one hand, and work at a more abstract level necessary to carry out the tasks in industry, on the other.

‘The government and the working class cannot be separated under the dictatorship of the proletariat’ insisted Guevara.³ Under socialism, the Plan has to increasingly replace the law of value in determining production and consumption decisions. In a country in transition to socialism from conditions of underdevelopment, measures have to be taken which increase productivity and efficiency. Without relying on capitalist levers, particularly individual material incentives, new mechanisms must be found to encourage greater worker effort and create incentives to innovation and the rationalisation of production. The Plan sets worker production ‘norms’, based on socially necessary labour time, but workers are urged to surpass these in order to increase economic efficiency. The challenge is to transform the value added to production by the worker above his own subsistence from ‘surplus value’, as under capitalism, into ‘surplus product’ under socialism and to move from production for exchange, to production for use. Under capitalism, the workers’ surplus is the product of exploitation because it does not belong to them. Under socialism, it is a contribution to social production – they work for themselves as part of a collective society. The surplus is distributed according to criteria determined by the plan. Workers’ management is essential under socialism because it ensures workers’ ownership of the means of production. The masses must participate collectively in devising the plan, establishing the norms and in daily decisions concerning production and consumption.

Following his self-criticism, Guevara introduced numerous policies within MININD to ‘establish direct contact with the masses’. These aimed to equip the working class for increasingly decentralised and direct control over production, to tap into workers’ creative energy to find solutions to daily production problems and to develop the productive forces – rationalising production, lowering costs, raising productivity and making technological innovations – forging the concept of Cuba as one big factory and work as a social duty. Ultimately these sought to give socialism the democratic, participatory character necessary to prepare society for transition to communism.

There were major objective conditions to overcome – underdevelopment and dependency, the exodus of managers and technicians who had run the economy before the Revolution and the low educational and skill level of the masses. Progress was hindered by ‘economistic’ tendencies, prevalent before 1959 among organised labour – years of battling to secure crumbs from the capitalist table had eroded class consciousness. Success depended on the Revolution’s ability to change workers’ attitude to ‘the bosses’ and the production process. The working class were so accustomed to having the production process imposed upon them that it was difficult to convince them

that they owned the means of production and could influence technological and managerial decisions. After being enslaved by work, workers now had to liberate themselves through their labour. This malaise manifested as inertia, a slow acceptance by workers that they had a stake in industrial development. Borrego recalled how Guevara complained about this reticence:

Che questioned why important tasks that were the direct concern of the working class always emerged as 'bureaucratic' initiatives. He pointed to the examples of the [training courses] *technical minimum* and *worker improvement* that were born as initiatives of the Ministry of Industries and not from the workers' organisations. *Why were the initiatives born above taken to the roots where they should have been born to be taken to the entire working class?*⁴

Inertia was also the result of hierarchical notions. Workers on the 'shop floor' did not identify with the need to resolve management problems. Guevara told MININD directors that they must discuss constantly with the masses, argue fraternally if necessary, in order to create a new spirit and understanding:

the working class has to be preparing itself to take up management work in the shortest time possible and the more that we can decentralise and create work habits independent of any material incentive, and independent of any administrative pressure, the quicker we will advance.⁵

Such patterns of behaviour, nurtured under capitalism, were difficult to break, particularly as Guevara argued strongly that new social relations and new ideas could not be imposed, but must be encouraged and fostered organically:

you cannot change how people think by decree. People have to change their way of thinking by their own conviction and the best way to change their way of thinking is to demonstrate the capacity for sacrifice of the true revolutionaries, the capacity to help a *compañero*, the capacity to do concrete things for the collective and for the individual, to show that members of a revolutionary organisation have not acquired any type of extra rights, what they have acquired are duties that they have to fulfil.⁶

Guevara pointed out that ideological differences remained among the Cubans according to their class origins and ideology – working class or bourgeois. These would have to be eliminated in a constructive way through the revolutionary process until everyone understood that socialism was a new stage for humanity; the most important force existing in the world.⁷ There were two options for workers: to integrate themselves into the Revolution, or to leave and continue as they were outside the country. Guevara's policy was

to persuade everybody to stay, not least because of the need for technically qualified personnel. But he pointed out that it was technicians – relatively privileged workers who had had the resources to pay for education prior to 1959 – who were leaving the island, not the working class masses:

It would be ridiculous to think that workers from a sugar cane cooperative would leave the country; those who had nothing before, whose salaries were lower, who had no defence against the bosses, who were oppressed and today are armed to defend themselves. Those who, if they don't have a house already, have the possibility of having one, who see the possibility of a better world, whose children are sure to be studying ... it's impossible that an honest member of the working class would leave.⁸

Bourgeois mentality, Guevara said, included prioritising personal comfort before production. Factories under construction had been delayed, yet before production had begun an air conditioned office was built. Individuals had to identify completely with the task of social production, eliminating individualism, competition and class conflict. Workers' management meant decentralising control of production, but that process had to be accompanied by a new collective consciousness and social relations, or the result would replicate the antagonism and self-interest of the capitalist economy: 'The economy as a whole is considered to be one big enterprise and we attempt to establish collaboration between all participants as members of a big factory, instead of being wolves among ourselves within the construction of socialism.'⁹ Centralisation was therefore necessary until both the new consciousness and technical skills had been acquired by the working class. Guevara's slogan was to 'centralise without obstructing initiative and decentralise without losing control'.¹⁰

In MININD the policy of 'sole responsibility' meant that after collective consultation in the work centres between the administrator and representatives of the trade union and the revolutionary party,¹¹ the administrator had the final decision and ultimate responsibility. Guevara compared this to the arrangement in the National Institute of Agrarian Reform (INRA) which he called a 'leaderless body', because in the provinces the party nuclei (leadership groups) had effectively taken over management:

The function of the nucleus is to serve as the motor of the Revolution, to mobilise and control the masses. Now, if the body of control is converted into the executive body, who controls this body? Criticism disappears automatically. With the disappearance of the channels through which criticism is expressed, superior bodies don't receive these criticisms; this has happened in the countryside, in agriculture ... We have to be clear that it is not the function of the active revolutionary nucleus to supplant

the administrative authority. Its mission is to mobilise the working class, to be its vanguard organisation, its motor.¹²

To assist the revolutionary nuclei in mobilising the masses for the self-management of the Cuban economy, Guevara set up numerous policies within MININD. These structures were in addition to the organisations of the masses, the trade unions and political groups established nationwide, and they supplemented voluntary labour and socialist emulation.¹³ The measures contributed to collectivising production and workers' participation in three ways: ensuring ideological and structural cohesion of the Budgetary Finance System (BFS); promoting workers' efforts to improve the means of production; and integrating workers into management, preventing bureaucratisation and separation between manual and administrative work.

IDEOLOGICAL AND STRUCTURAL COHESION

The bimonthly meetings within MININD were an important tool for ensuring ideological and structural cohesion in the BFS. The first meeting took place in January 1962, attended by the Management Council and all directors in the central apparatus: directors of the Consolidated Enterprises (ECs), their heads of production and economic heads, directors from the ministry's provincial delegations, directors from research institutes, advisors, and other invited guests – up to 400 people. Each meeting had set themes, which the directors themselves could propose. The meetings gave ministry leaders the opportunity to raise their own queries, ideas or complaints. It is clear from the meeting transcripts that they used this opportunity.

In addition, MININD had three publications; *Nuestra Industria* from 1961, joined by *Nuestra Industria Tecnología* from 1962, and *Nuestra Industria Económica* from 1963. Juan Valdés Gravalosa was editor of *Nuestra Industria*, and it was his idea to produce it in A5 size, modelled on US magazine *Reader's Digest*. Valdés Gravalosa sent the first draft to Guevara to look over before publication. He said: 'Every month Che personally revised it making pertinent observations and criticising errors and deficiencies in the material so it could be corrected before publication. In the second stage he designated the vice ministers to meet with us every month to collectively analyse the material before it went to the printers.'¹⁴ Guevara once complained that his photograph appeared four times in one issue: 'I never put in a photo of him again!' said Valdés Gravalosa.¹⁵ Produced by a team of seven workers, 35,000 copies of the journal were printed monthly by MININD's EC of Graphic Arts and, from 1962, with paper made from Cuban sugar cane *bagazo* – the cane residue once the juice has been squeezed out. It was sent to every MININD production unit in the country.

Nuestra Industria was designed to create a sense of the collective among the huge and diverse production units in the ministry. Every issue gave a detailed description of the technological process in a different factory and had sections called: ‘the labyrinth of bureaucracy’, and ‘factories that are behind’ – listing productive and administrative problems within the ministry and its enterprises. Along with citations from Lenin on emulation, the magazine was full of recognition and awards given to exemplary workers and technicians – for inventing equipment, for rationalising production processes or for high productivity and outstanding commitment. A diagram covered the back page with arrows running between the minister, the first vice minister, the vice minister of production, the branch director, the EC director, the factory and finally a man in dungarees, with the words: ‘Your work centre is a solid link in the great chain of production of the Ministry of Industries.’¹⁶ Valdés Gravalosa concluded that *Nuestra Industria* was polemical, and ‘it defended the Budgetary Finance System and moral incentives as the fundamental lever’.¹⁷

Vice Minister of Technical Development, Tirso Sáenz, was responsible for *Nuestra Industria Tecnología*, a specialist journal for technicians and engineers, edited by María Teresa Sánchez, head of the Department of Scientific-Technical Information.¹⁸ The August 1963 edition contained an article by a Hungarian engineer Pal Mihalyfi, on the analysis of production, with complex econometric equations.¹⁹ Other articles concerned sugar crystallisation, chromatographic analysis of colorants for synthetic fibres, ‘derivatography’ – a modern Hungarian method of thermo analysis, an article translated from the English magazine *Iron and Steel Engineer*, an article by Sánchez herself about documentation and searching for information, and over 20 pages with tables listing technical norms.²⁰ *Nuestra Industria Tecnología* reflected the rising technological level within the ministry, collaboration with technicians from the socialist bloc and efforts to keep abreast of developments in the capitalist countries.

Guevara and Santiago Rieras, Vice Minister of the Economy, edited *Nuestra Industria Económica*, and after the third edition, Miguel Figueras, director of the Perspective Plan in MININD, joined as a subeditor. This was the vehicle for the theoretical articles which formed part of the Great Debate arguing for or against the application of the Soviets’ Auto-Financing System (AFS) of economic management or Guevara’s alternative BFS.²¹ It also carried articles about salaries, investments, financial systems and mathematical methods and was orientated towards accountants and economists.

MININD publications served to link education to production, forging a collective concern for national development and disseminating information about technological innovations. They provided a means for Guevara to communicate his ideas about socialist transition to workers outside the bimonthly meetings and to generally raise their political understanding.

The *Manual for Factory Administrators* (*Manual Para Administradores de Fábricas*) ensured operational cohesion by collating Ministry directives on procedures for cost control, accounting and supervision into two volumes, together with political economy concepts. Published in June 1964, it emphasised the importance of collective production and workers' participation, with practical guidance on how to achieve this. The administrator, it stated: 'must be convinced of the incalculable source of inexhaustible ideas, inventiveness, practical knowledge, etc. that is latent in each one of the factory workers and establish a more adequate and effective system to make use of these resources'.²² Success in reducing the costs of production 'will mainly depend on the understanding and conviction of all the factory's workers of the need for this approach and the collective benefits that will be derived from it'.²³ Respecting the aspirations and criticisms of workers in all forms of communication fosters emulation, encourages workers to feel involved in management, helps them to accept changes to the past system, avoids a lack of knowledge being an excuse for incompletion of tasks, assures uniformity in application and allows projections into the future.²⁴

Within the section on 'fundamental concepts', the *Manual* includes a political exposition by Guevara on the role of cadre – leaders – and their formation.²⁵ In the period after taking power, he wrote, bureaucratic roles were assigned without analysis. This was not a big problem because old structures remained intact and continued to function, albeit with inertia and disdain for the political changes that were a necessary prelude for transformations of the economic structure. Later, the escalation of the revolutionary process following the nationalisations of enterprises and the brain drain of specialists, led to a real scarcity of administrative and technical personnel: 'We all filled our roles as well as we could, but not without embarrassments and difficulties. Many mistakes were committed in the administration of state apparatus, enormous failures were made by the new enterprise administrators, who had too many responsibilities in their hands'.²⁶ Now, however, the task was direct contact with the masses to pull out a new leadership and develop these cadre.

Guevara described a cadre as a leader who exercises creative initiative, without conflicting with discipline, practices collective and individual decision-making and responsibility, is of proven loyalty, could engage in debate and is prepared to give their life for the Revolution. A cadre is both an exemplary individual and encountered daily among the Cuban people – a creator, a leader, a technician who was politically knowledgeable, understood Marxist theory and could reason dialectically to advance their sector of production and develop the masses from their own leadership position. Cadre must be selected from among the masses: political cadre, the foundation of mass organisations; military cadre, the young combatants, tested under fire but who must now

develop theoretical knowledge; and economic cadre, dedicated to the difficult tasks of planning and organising the socialist state. They know how to harness the knowledge of existing professionals, he said, and should be encouraged to pursue technical careers, to give science the energy of ideological enthusiasm that will guarantee accelerated development. Cadre must have political clarity with reasoned, but not unthinking support for the principles of the Revolution. This required

a great capacity for sacrifice and the capacity for dialectical analysis, which will enable them to make continuous contributions on all levels to the rich theory and practice of the Revolution. These *compañeros* should be selected from the masses solely by application of the principle that the best will come to the fore and that the best should be given the greatest opportunities for development ... The cadre is the key component of the ideological motor that is the United Party of the Socialist Revolution ... not simply a transmitter of slogans or demands upward or downward, but a creator who will aid in the development of the masses and the information of the leaders, serving as a point of contact between them ... there are no better cadre than those chosen by the masses in the assemblies that select exemplary workers.²⁷

In March 1962, Guevara told MININD directors that

The Revolution has to be made at a furious pace, those who tire have the right to be tired, but they do not have the right to be in the vanguard. Therefore we need to go to the factories, to converse with everyone there, investigate the problems there are, promote free, open discussions, without any form of coercion ... to collect all criticisms with honesty.²⁸

To facilitate free and open discussions in MININD managers and administrators had to be in contact with the workers at the point of production. This was essential in order to avoid bureaucracy, to improve their knowledge of the functioning and problems in the productive units and to stimulate the workers interest in improving the production process.

WORKERS' EFFORTS TO IMPROVE THE MEANS OF PRODUCTION

Committees for Spare Parts

Among Che's most acknowledged achievements were results in the production of spare parts, an objective which was possible thanks to the creation of the Committees for Spare Parts which, organised from the base up to the ministry and by means of enthusiastic emulation resolved the most serious problems that arose, avoiding the paralysis of industry.

Orlando Borrego Díaz²⁹

In the 1950s, 95 per cent of capital goods in Cuba and 100 per cent of spare parts were imported from the US.³⁰ In the context of the US blockade and the shift of 80 per cent of Cuba's trade from the US to the Soviet bloc, the problem of spare parts was acute. The island struggled to replace machinery parts worn out in production. Before the Revolution, Cuban or foreign managers in Cuba could telephone orders to the US for replacement parts or technical assistance which would arrive in Havana on a shuttle boat within two days. There was no culture of stockpiling for future security, so even once the blockade was anticipated, administrators did not build up reserves. They often waited until machinery parts were totally worn out before ordering mechanics to make replacements and then ordered parts separately which was more expensive than ordering in bulk. Guevara described the result: 'if any type of crisis occurs, whatever small veering off course in maritime navigation, any delay in the arrival of a couple of boats can cause a paralysis of many industries'.³¹ The fact that the Committees for Spare Parts were the first workers' committees established in industry testifies to how rapidly spare parts became a central issue for production in Cuba.

The Committees were set up in 1960 under the Department of Industrialisation which preceded MININD. By August 1961, at the National Production Conference, Guevara declared that the Committees represented MININD's 'first really effective contact with the mass of workers', and that 'this first campaign of organised emulation has given really wonderful results'. This brought the mobilisation which had been so successful in the political and social sphere into the economic sphere in industry:

with the emulation of everyone and with the effort of all the workers in all the factories of the country, they have resolved innumerable problems ... The work is still not organised but it is improving all the time, as are our aspirations and it is one of the achievements that the Ministry can show with pride, though naturally, it is not the achievement of the Ministry, rather it is the achievement of the unity with the working masses, making the participation of the working masses fundamental to the leadership of the country.³²

Given the failure of the first Cuban trade mission to the Soviet bloc to purchase a factory of spare parts, the Committees were vital in bridging a gap to keep production going.³³

By late 1962, the First National Exhibition of Spare Parts, created within the EC of Petroleum, took place in Havana. *Nuestra Industria* reported that 'The exhibition shows some 500 parts of diverse types such as: electrodes, axles for pumps, mechanical equipment for various uses in the petrol industry, machines ... all built in the workshops of the refineries "Hermanos Díaz" in Santiago

de Cuba and “Ñico Lopez” in Havana and including a varied collection of components manufactured in different terminals of the Republic.³⁴ The same issue carried photos of equipment and parts built by the workers of the refineries J. A. Echeverría.³⁵ The quantity and diversity of spare parts manufactured and displayed in just this one issue of *Nuestra Industria* is testimony to the success of the Committees for Spare Parts.

Movement of Inventors and Innovators

When the Department of Industrialisation was set up within INRA, dozens of inventors and innovators arrived at the offices to show their creations. Borrego recalled:

They appeared in abundance forming a diverse range of specialities and levels of qualification. Among them were technical engineers of medium qualifications or people of low educational levels but with astonishing intelligence. The most ingenious ideas imaginable had occurred to them. Most of them appeared with prototypes or miniature models which awoke a curiosity in children and adults alike.³⁶

A new section had to be created in the department to deal with the quantity of models submitted for evaluation. This soon served as an improvised exhibition, with models ranging from aeroplanes for the Revolutionary Armed Forces (FAR), to sugar cane cutters, retrievers and storage centres, to air-conditioning compressors, and even a machine to generate electricity from sea currents. The inventions and innovations revealed the limitless imagination of the population, but also the extent that talents were wasted for want of technical training. Borrego nostalgically recalled that ‘the exhibition served as an occasional nocturnal distraction for those of us that worked in the Department’. At night they would often meet in front of the exhibition. ‘There was no lack of those who returned to their infancy and played on the floor with the small automobiles or the miniature clockwork locomotives.’³⁷ In February 1961, the new MININD included a Department of Inventions and Innovations within the Office of Norms and Metrology under the jurisdiction of the Vice Minister for Technical Development.

Describing the Department’s role, the *Manual* stated: ‘the work of Inventions and Innovations is of vital importance for the technical development of factories, because it constitutes one of the bases which should help the Administrator to achieve an increase in the production and productivity of the factory’.³⁸ The department was to lead and coordinate the development of the movement of inventors and innovators and their industrial application in coordination with the ECs and the trade union organisations. These objectives were to be embedded in the work centres by creating teams of ‘factory cadre’ which would

incorporate one worker who was responsible for inventions and innovations: 'registering all the inventions achieved by the workers, in order to revise and determine which could have general industrial application. Afterwards, they will systemise the inclusion of the corresponding inventions in the economic plans of industrial development.'³⁹ Inventions were to serve an important function in industry.

Guevara gave special attention to the movement of inventors and innovators, personally interviewing the designers of the most promising projects submitted. Borrego said that no one could have imagined the extent to which this movement would become an organised force bringing solutions to innumerable technical problems following the nationalisation of industry:

From the evaluation of those projects, some that appeared to be mere dreams, would very quickly emerge as great technological solutions for the development of agriculture and industry in Cuba ... The movement of inventors and innovators got the whole country on board and its enduring drive has lasted until today on a par with the growth of the development of science and technology attained in the years of the Revolution, representing millions saved by substituting imports or national production of the most diverse machinery, equipment, spare parts and other products for different sectors of the economy, including the country's scientific and the public health sectors.⁴⁰

In Guevara's view, workers' experimentation reflected their commitment to production, and consequently their efforts would focus on improving the productive forces. Research carried out by technicians, he said, had the potential to totally change economic concepts, the results of which should be respected.⁴¹ The social utility of individuals' inventions was significantly enhanced by the absence of market mechanisms, such as copyright, patents laws and intellectual property rights, which would have increased the social costs of research and development. People were motivated by moral incentives – vanguard status and social applause in the realisation and application of their inventions and innovations.

Cubans have acquired an international reputation for their resourcefulness and their ability to commit human and material resources in order to find solutions to the most acute problems of the moment. The movement of inventors and innovators has evolved into the National Association of Innovations and Rationalisers today in Cuba. Beyond this institutional form, the daily inventions which Cubans create to overcome material shortages and maintain old equipment have become embedded into national culture and generically celebrated as '*inventos*'.

Construct Your Own Machine

The campaign to Construct Your Own Machine has been immortalised by Tomás Gutiérrez Alea's film *Death of a Bureaucrat*, in which a vanguard worker, who invents a machine to mass produce busts of Cuban independence hero José Martí, is buried with his worker's card, leading to a nightmarish struggle against bureaucracy to retrieve it for his widow's pension.⁴² Evolving out of the success of the Committees for Spare Parts, the campaign took the technical challenge to a higher level; as Sáenz said, 'to contribute with our own solutions to breaking the imperialist blockade imposed on our country'.⁴³ Borrego explained how this was organised:

The workers and technicians with the most revolutionary drive and highest qualifications were selected and multidisciplinary groups were created to copy the most important machines in the country. Later they would try to reproduce them on the scale necessary and with the largest possible proportion of national resources with the goal of achieving the independence required in those technologies that traditionally had been totally imported from other capitalist countries.⁴⁴

Guevara told a workers' congress in November 1961: 'a machine is nothing more than a unit of parts. We should learn to love it and learn the mechanical sense of this machine.'⁴⁵ He told MININD directors to urge everyone to investigate a one step further, to encourage restlessness and curiosity: 'To the workers who make machines, to the workers who invent formulas, to the workers who are concerned for the rationalisation of work which is even harder than inventing a machine; to these people we must give the opportunity to become a director.'⁴⁶ For Guevara, there was little distinction between technical and political tasks, increasing productivity and efficiency were revolutionary acts.

Although Guevara complained in March 1962 that the campaign was 'another demonstration of how things have already taken a bureaucratic form',⁴⁷ it appears to have been revitalised by 1963 when almost every monthly issue of *Nuestra Industria* featured workers with their inventions in a section reporting on the campaign to Construct Your Own Machine. In February 1964, Guevara declared that 'The future of industry, and the future of humanity, is not with the people who fill in papers, it is with the people that construct machines ... It is with the people who study the great technological problems, resolve them ... discover new things and learn to take out new things from nature.'⁴⁸ The challenge was great, but a significant number of machines were built and applied in industrial production.⁴⁹

WORKERS AND MANAGEMENT

Factory visits

Such importance did Guevara give to fortnightly factory visits that, in October 1962, in the midst of the Cuban Missile Crisis and at night on return to Havana from Pinar del Río province in western Cuba, he stopped to tour a pencil factory at Batabano. As commander of the western province, Guevara had taken up position to organise the country's defences there. At 8am on Monday 22 October, compañeros were seated ready to start the Management Council meeting – certain that Guevara could not possibly attend. Ángel Arcos Bergnes, present as director of Personnel, recalled: 'To everybody's surprise, Comandante Ernesto Che Guevara entered. He came in his campaign clothes, boots covered in mud and exhaustion visible on this face, but he arrived with a smile saying: "Good morning, sirs. You didn't think I wasn't going to come?"'⁵⁰ During the checks for completion of factory visits, Secretary of the Council Valdés Gravalosa announced hesitantly that there had been an incompleteness of the task – by the minister. But Guevara pulled out a handwritten report declaring that he had indeed completed his social duty, adding: 'the report has not been typed up because where I am there are no secretaries'.⁵¹ Following this example there were no more excuses for laxity in this task.

EC directors and vice ministers in MININD were obliged to visit a factory, plant or workshop every week as part of the struggle against bureaucratisation and to maintain a lively link with the mass of workers. During the visits they met with the administrator, heads of production and economic heads and the representatives of the mass organisations – the party, the Union of Young Communists (UJC), trade unions, and any other groups in those entities. They discussed problems and initiatives with workers and technicians in the production process, checked inventories, storage facilities and worker facilities.

Factory visits began as a recommendation by Guevara, but in the first year of MININD when he saw that they were not being completed systematically, he made them obligatory and set up a Commission to produce a directive. Compañeros on MININD's Management Council who failed to carry out fortnightly visits would have three days' salary docked with the threat of substitution.⁵² Following each visit they submitted a detailed report, analysing the situation in the factory and including concrete recommendations for improvements. Valdés Gravalosa programmed the visits, rotating their trips to the eastern provinces: 'Che read the factory visit reports. They had an index, a check list. For example, you arrive at the warehouse – you have to check the inventory cards.'⁵³

Factory visits provided an opportunity for thousands of workers to meet and discuss directly with the management personnel of MININD, including with the minister. Throughout Cuba there are workplaces which continue to celebrate the collective memory of Guevara's visits. Harry Villegas, Guevara's bodyguard, said factory visits and conversations with the workers 'were a link with the masses which gave Che an exhaustive command over the reality of the activity in the sphere which he led'.⁵⁴ Guevara's talks in the bimonthly meetings are peppered with references to his experiences and encounters during these factory visits.

The *Manual* took the procedure further down to the base of production, instructing factory administrators to visit the workshops and sections within their work centre. But these visits must be lively and real:

If we visit the workshops in a pressured way we will never derive benefits from these visits. They should not be done simply to complete the directive, but with the ends of obtaining from the visits new ideas to improve activities and to listen calmly and with interest to the suggestions and criticisms of the workers.⁵⁵

In addition to contact with the masses, the visits allowed management to learn about the production process, the principle economic indices, hygiene or safety problems and discuss the quality of the product – helping desk managers to understand the reality behind reports and statistics. For example, Arcos was struck by how tough the conditions were when, on a visit to Matahambre mineral mine, he went 4,000 feet (over 1,200 metres) underground to see the work done in narrow galleries at the deepest level, where the air was thin and damp and high temperatures drenched workers in sweat. On leaving the mine they had to wash in diluted disinfectant to prevent illness. The visit had revealed to Arcos the urgent need for the best-quality wood in holding up the mine ceiling; the Central Planning Board (JUCEPLAN) had provided second-rate wood which was splintering.⁵⁶

Advisory Technical Committees

The Advisory Technical Committee is, then, a laboratory experiment where the working class prepares itself for the great future tasks of the integral management of the country.

Che Guevara⁵⁷

Most of the new administrators allocated to factories, plants and workshops following the nationalisations and the exodus of professionals lacked the experience and qualifications for their roles. They were selected for their loyalty to the principles and radicalisation of the Revolution, with the priority of preventing production stoppages: 'practically none of the administrators

possessed the necessary technical level or experience in production for the factory they were leading'.⁵⁸ Guevara searched for institutional forms to secure assistance for these administrators from the working masses, those with years of experience of the production processes. In 1961, Advisory Technical Committees (Comités Técnico Asesor – CTAs) were set up in every work centre and every EC to serve this function. Outstanding workers were selected by the administrator or director to advise them on practical measures for the essential tasks of rationalising production, reducing costs, improving technology and finding technical solutions to production problems such as replacing imports and ensuring the production of spare parts. An average of 10 per cent of employees could be on the CTAs, and in larger workplaces they were organised into subcommittees which focused on specific problems. Borrego explained:

Their principal function was to discover productive reserves in order to accelerate production, as well as advise the administrator or enterprise director in their technical functions with the same objective, to propose ideas for improving the conditions of work and safety in factories, to facilitate a closer relationship between the workers and the management of production and to generally help resolve the complicated problems that occurred as a result of imperialist enclosure and the blockade imposed on the economy of the country.⁵⁹

The CTAs were another indication that Guevara did not distinguish between the technical and political tasks of the working class. He believed that if they were selected from the most dedicated and knowledgeable workers, in addition to improving work conditions and productivity, the CTAs would constitute a revolutionary vanguard, inspiring the masses by their engagement in production and promoting the self-management of the working class.

Sáenz confirmed that CTAs 'were really useful tools for management' and compared them to the quality committees functioning in Japanese industry to study solutions for production problems.⁶⁰ Guevara had visited Japan in 1959 during his seminal trade mission as the head of the first post-1959 Cuban delegation overseas, although he did not mention the Japanese committees in his published report on the visit.⁶¹ Omar Fernández, who accompanied Guevara on that trip which then moved on to Yugoslavia, claimed they saw committees similar to the CTAs in Yugoslavia.⁶²

The CTAs combined Guevara's efforts to exploit the knowledge of professionals and technicians, regardless of their ideological tendencies with his determination to foster a conscious commitment from the entire working class to improve productivity and efficiency in the planned economy.

Production Assemblies

The Production Assemblies involve all the workers of the factory who meet democratically and put their view points about the progress of the industry and the plan. The Production Assembly represents a kind of legislative chamber that examines its own tasks and those of all the employees and workers.

Che Guevara⁶³

Production Assemblies generalised the active role of the CTAs among the entire workforce. They involved a meeting of all the workers, advisors, technicians, engineers and administrators linked to each workplace, at quarterly, if not monthly intervals. The idea came through the collaborative work between Guevara and the Ministry of Labour (MINTRAB), headed by Augusto Martínez Sánchez, in searching for a vehicle for communication between the administration and the mass of workers.⁶⁴ Production Assemblies were called by the political organisations, trade unions, enterprise directors, or factory and workshop administrators who agreed an agenda between them. The Assembly itself chose workers to chair and act as secretary during the meeting, recording the acts, certifying agreements and resolutions. In late 1961, Guevara explained his vision:

the Production Assemblies will be part of the life of the factories, and will be an armament of the entire working class to audit the work of their administration, for the discussion and control of the plan, for the establishment of new technical and organisational norms of all types, for every kind of collective discussion or every nucleus of the factory, or all the workers of the factory, or all the workers of a department, according to the importance of each unit of production.⁶⁵

Following their implementation in MININD, in January 1962, MINTRAB's Resolution 105 made Production Assemblies compulsory in all nationalised or joint-owned workplaces in the country. Among the important functions of the Assemblies, Guevara emphasised that they served to educate the administrators in the necessity for critical analysis of their own work before a plenary of the mass of workers, helping to improve the efficiency of administration:

Criticism and self-criticism will be fundamental to daily work, and exemplified in the Production Assembly where all the problems related to industry are aired and where the work of the administrator will be subject to questioning and criticism by the workers he leads.⁶⁶

The *Manual* described the Production Assembly's objectives as motivating workers to participate in the management of production and to contribute to benefiting the collective, applying the principle of democratic centralism,

facilitating the workers in expressing doubts and ideas which the administrators must discuss and clarify, creating a spirit of collective interest in the development of the factory and inspiring interest in individual and collective emulation.⁶⁷ Guidance notes promoted the good organisation of the Assemblies, with advance notice of the agenda to workers, comfortable seating, adequate amplification, fixed ending times and the insistence on focused and concrete treatment of the themes up for discussion. A minimum of 70 per cent of the workers must participate or Assemblies had to be cancelled. Trade unions, the party and other mass organisations were responsible for mobilising workers to participate. Minutes from the meetings should be circulated after the Assembly to keep workers informed and encourage further analysis and the administrator was expected to respond to workers' points: 'and in this way to try to constantly improve any deficiencies of organisation; lack of interest, lack of collective participation, etc., in order to obtain the maximum benefit that a good assembly should and can yield'.⁶⁸

The Assemblies had to achieve a delicate balance between being authentic and gritty, tackling deficiencies in production or work conditions without becoming a forum which generated antagonism between manual and administrative workers. Guevara insisted that these meetings should not become bureaucratic. He challenged MININD directors: 'The production assemblies have to be lively. It is your responsibility to make them lively.'⁶⁹ However, he also warned against them becoming agitational rallies – distracted by 'economistic' demands which ignored the national interests – rather than discussing what should be produced and how.⁷⁰ By February 1964, the deficiencies of the early Production Assemblies had become clear. Guevara described an Assembly of criticism and self-criticism which had taken place at the end of 1961:⁷¹

I believe it took a year and a half to compile the conclusions of that assembly and they were never analysed. In reality that was a bureaucratic failure, carried out on all sides, everyone did assemblies of criticism and self-criticism. In addition, there was a lot of venting and insults, the product of a lack of consciousness, the product of comrades from the mass of workers who did not understand the fundamental problems of management. But for all that there was a set of problems that were indicators of the malaise that existed and the deficiencies, and none of this was made use of.⁷²

A survey had revealed that many EC directors did not analyse the results of Production Assemblies. Guevara challenged them directly:

Raise your hand all the enterprise directors who do not analyse the opinions of the Production Assemblies in your factories! Seven, no more? Now, those that analyse them. There are many. Now ... who has noted the phenomenon that the numbers

participating decreases? What enterprise has had participation greater than 70 per cent in the latest assemblies?⁷³

Guevara informed them that during his factory visits he listens to numerous criticisms – some of which reveal the need to improve the existing apparatus. He announced that the Assemblies must be suspended until enough workers attended, even if they had to be called and suspended every day until 70 per cent turned up. He assured them that participation would increase if workers were informed of the results of their complaints and proposals – how many had been resolved and at which organisational level they were dealt with, and which problems have not yet been resolved, so that ‘the workers start to feel they are participating in the administration’.⁷⁴

Despite Guevara’s frustration with a certain routinism creeping into the practice of Production Assemblies, he clearly believed that the institutional structure was adequate and appropriate if implemented with the correct spirit. The deficiencies were due to administrators, directors and political and trade union cadre who failed to turn the Assemblies into dynamic and effective forums for workers’ participation in management and production, as opposed to mere talking shops. Production Assemblies became an embedded and integral aspect of work life in Cuba and continue to take place in all sectors today.

Committees for Local Industry

[B]etween socialist enterprises there can be no transfer of commodities because there is no change in property. It is the use of those utensils or means of production in more rational ways by another enterprise, without a real transfer of property, of legal contract, the goods simply go from one place to another ... That could be desks, machines, a vehicle that is not being used, that everyone is reluctant to hand over ... we get together, discuss and resolve this.

Che Guevara⁷⁵

The Committees for Local Industry (CILOs) were created in 1962 to forge the unity of production and administration at the micro level which the BFS institutionalised on a macro level. The CILOs complemented the centralisation of finances and resources and their allocation according to political priorities under the BFS as part of Guevara’s critique of commodity exchange between enterprises under the AFS.

Administrators from each workplace within a local area would meet fortnightly to discuss their situation in terms of resources and assess whether any of them had materials or expertise which could be handed over to those in need. The goods exchanged between entities did not take the form of a gift, but official papers were exchanged and accounting and inventory adjustments

had to be made. CILOs evolved more complex functions, facilitating the coordination of industrial plans with other local authorities, suggesting new territorial investments, discussing laws, directives, regulations and norms issued from higher levels and organising attendance on administrator improvement courses.⁷⁶ The *Manual* stated that 'the growing complexity of industrial development, as well as the need to use our resources more rationally, makes coordination necessary on the basis of territory for the industries administered by the Ministry of Industries'.⁷⁷ Guevara promoted the CILOs as an important means for the decentralisation of production and workers' management:

The CILO is an idea for preparing the conditions for future steps. What future steps? The construction of socialism. To socialism, and from socialism to communism ... self-management is a measure to prepare the conditions for raising consciousness, creating what is the base of communism: work as a social necessity; not work as an obligation, as a precondition for eating ... The CILO should be resolving the local problems.⁷⁸

Guevara insisted that inter-factory cooperation was essential and he stated that the CILOs must be given the necessary authority to complain when their work was obstructed. He gave the example of an administrator within the EC of Petrol who gave two surplus desks to an administrator in the EC of Shoes who was writing on his knees, but was then reprimanded by his own director for doing so without permission: 'But, gentlemen, you have to promote this', he told the EC directors.⁷⁹ MININD's Provincial Delegations must support the CILOs and oblige attendance. He concluded: 'What is fundamental? That the CILO condenses the opinion of every body and that it is understood that it is another apparatus at the base of the Ministry.'⁸⁰

Organised at the local level as part of the early ministry efforts to decentralise, various problems emerged with the CILOs, for example, some sugar mill administrators refused to participate or policies were devised which clashed with ministry directives.⁸¹ To overcome their weaknesses, CILO management was centralised in 1963. However, to avoid the bureaucracy which had plagued other initiatives, Guevara put a single individual in charge at the ministry level – Eugenio Busott, director of General Services in MININD. Each area incorporating 15–20 MININD workplaces was organised into a CILO which met fortnightly – Havana alone had 20 CILOs. One member of the CILO took up the presidency, representing them on the Board of Local Coordination, Execution and Inspection (JUCEI-local), a nationwide apparatus made up of representatives of the political organisations and central government to coordinate and supervise local developments and local public services. Presidency was rotated, giving the experience to all the administrators. The

CILOs met in any of their workplaces except where the president worked, familiarising administrators with other work centres. The CILOs made official reports of their meetings and agreements – which could not contradict their ECs directives. They received guidance via MININD's Provincial Delegates, except the CILOs in Havana which were directly subordinate to Borrego as first vice minister. Administrators were obliged to participate and fulfil the agreements. Busott travelled around the island visiting CILOs. He recalled the types of obstacles faced:

There was an old bakery where the oven was insulated with special refractory brick. The oven collapsed and they needed a special mason because of the oven's shape. Nearby was a sugar mill with a mason, but the administrator there didn't want to cooperate. He thought he was too powerful to be part of the CILO. To demonstrate how everyone was linked Che told him 'OK, from tomorrow the workers at the sugar mill will not receive bread from the bakery.' That convinced the sugar mill administrator not to think he was self-sufficient ... Most important about the CILOs was the sense of belonging, that each unit was part of that big Cuban factory.⁸²

In September 1964, Guevara reaffirmed: 'The CILOs have been an attempt, successful enough we believe, to create the consciousness of one factory.'⁸³ Borrego pointed out that these ideas on industrial cooperation were not a product of intuition, but the result of Guevara's studies of the experiences of other countries, 'including capitalist countries such as Japan which had demonstrated the utility of intensive cooperation', which led him to conclude: 'if such cooperation was effective in the functioning of capitalist interests, it would prove much more necessary and important to develop this experience in socialist conditions where social interests prevailed over any private or enterprise interests'.⁸⁴ This complemented Guevara's belief that the corporate capitalism, which had dominated 1950s Cuba, created conditions more conducive to the transition to socialism than those prevailing in 1920s Soviet Union, out of which the AFS had emerged. Arcos concluded that the CILOs held the genesis of the system of People's Power operating in Cuba today.⁸⁵

The CILOs had the potential to resolve problems and contradictions at a national level which should simply not exist in a socialist society, yet which did for bureaucratic reasons. Arcos explained how, ten years after Guevara first set up CILOs, when he was working in the Ministry of Domestic Trade, it was necessary to implement a similar resource sharing scheme to tackle ridiculous situations which arose. For example, five electricians from an electronics factory which was paralysed for repairs were being paid without working, while next door there was a hairdresser's with five broken dryers and no one to fix them.⁸⁶

Plan of Integration

For a long time we have raised the need for a real integration between productive and intellectual work, something that has been achieved through voluntary labour of a productive character, that now has been presented in a plan at the national level.

Che Guevara⁸⁷

Bureaucracy, said Guevara, had until now, appeared to be endemic in the socialist system. It was present in MININD, along with a tendency towards a separation between intellectual and manual work and a lack of real integration between enterprises which were not in the same branch of production. In September 1964, Guevara presented industry directors with his most imaginative and innovative policy to confront these political weaknesses. The Special Plan of Integration was a measure 'to renovate the attitude of functionaries in the face of their work'.⁸⁸ Guevara told Arcos: 'this is new here, something similar functions in China, but we have made changes and contributions because we have different conditions and other idiosyncrasies, but the objective is the same'.⁸⁹ He read an outline of the draft proposals to all MININD directors, advisors and vice ministers who were given 15 days to comment and make amendments. Even the title, he said, could be changed. Some measures were voluntary, others obligatory. The Plan was comprised of three elements – the Plan of Demotion, the Plan of Integration and the promotion of manual work for office workers. This was to be piloted from 1 November 1964 and applied throughout MININD from 1 January 1965.

The Plan of Demotion was the principal and obligatory measure. Directors had to spend one month a year working in a job at least one level, and preferably two, subordinate to their own. The plan applied to the minister (Guevara), six vice ministers (first vice minister, Basic Industry, Light Industry, Economy, Industrial Construction and Technical Development), eight branch directors and 82 EC, office, and institution directors. In exceptional cases it could also include administrators or technicians in large factories. Within a one-month period, not more than 25 per cent of a given hierarchy could be demoted, so, for example, only one vice minister could be demoted at any given moment.⁹⁰ Their own work would be covered by a colleague, while they worked alongside their subordinate, creating a system of work pairs/substitutes which remains in Cuba today. Directors who had been in their current position for less than six months did not qualify to participate.

During their temporary demotion directors should: not search for mistakes, but learn and teach; not change work methods and established systems without profound analysis and collective discussion in the factory; assume full responsibility for that role without leaving tasks incomplete; complete all the obligations of the new role without using the hierarchy of their real role.⁹¹ In addition to

strengthening the administrative and leadership work of their subordinates, the Plan also meant that those demoted could observe whether it was possible to apply the regulations directed from superior levels, experience the social-labour conditions of the factory, workers' cafeteria and food, sanitary installations, equipment for physical protection, and so on. Guevara stated: 'Fundamentally, the ministry is one administrative and technological entity. It is subject to a methodology which is different when observed from one or another level ... You can observe where there are mistakes of methodology, failings in the methods of work and even personal weaknesses.'⁹² The Plan also ensured that leaders connected directly with the mass of workers and understood their problems, learning about the operative and technological difficulties and the technology of the production process, all of which would prove useful when they returned to their official post. In addition, it served to remind them that their management roles were not fixed for life and that directors could return to the production base.⁹³ Borrego said that in 'many conversations with Che or in work meetings in various contexts he always insisted to all his collaborators that the true revolutionary should put all their love into work but without considering that position as a personal right, much less a job for life'.⁹⁴

The Plan of Integration established specialist work brigades formed from outstanding workers to assist throughout the ministry. Arcos explained: 'This plan also included a plan of mutual assistance between offices of enterprises or between administrators of factories, a plan of specialised work brigades, and a plan of brigades for work methods.'⁹⁵ This was a case of horizontal integration; directors, economic heads and production heads from stronger ECs would assist weaker ECs and administrators would do likewise.

Announcing the formation of the specialist work brigades, Guevara said they would be organised around eight fundamental tasks of MININD, with workers outstanding in these areas. He gave the examples of work security, organisation of transport and mechanisation of accounting. These brigades would be auxiliary for ministry personnel of the same specialisation.⁹⁶ The specialist brigades were to be set up by the ECs themselves, which would start by listing their strengths and organising groups around them. The brigades would help enterprises weak in that area to strengthen their work. Participation in the brigades was voluntary, although only workers who had surpassed their own employment goals could join them. A special salary scale would be transferred with them as they travelled through the provinces visiting MININD entities and teaching their methods. Technical teams for maintenance or electrical engineering were also planned.⁹⁷ As an example, Guevara said the EC of Soaps and Perfumes, directed by Miguel Domínguez, would organise a brigade to assist with inventories, having excelled in this field. The aspiration was for specialists in many fields, he said, to guide the weakest enterprises.⁹⁸

That such specialist brigades were proposed testifies to the success in raising the technical level of MININD workers a few years after the massive deskilling of the Cuban labour force resulting from the exodus of professionals. Guevara emphasised the cooperative spirit of these exchanges which had a political as well as a technical function:

The comrades who carry out any of these advisory tasks should not present any reports, this is to ensure and conserve the spirit of warm and disinterested help between people or individuals, so that weaknesses are analysed only with the objective of overcoming them and not to serve as an antecedent for taking future action, except if they have detected abnormalities that constitute crimes against the Revolution or against the state. That is to say that there is no kind of 'squealing', so that straight away the weak people are going to see the *compañeros* as hungry lions. It is better if this task is carried out as a completely extra-ministerial type of assistance for the purpose of information, except, naturally, if there are serious things detected of a non-administrative nature.⁹⁹

The Plan also promoted the commitment of managers and office workers to carry out voluntary labour in the factories during their holidays. Guevara said: 'it is essential that directors, administrators and other leaders participate directly in manual tasks. However, this will be voluntary and separate from the earlier point about obligatory demotion.'¹⁰⁰ Juan Borroto, director of Supervision, took up the challenge, cutting his honeymoon to one week, after which he went to work in a glass factory for three weeks: 'I worked on a line where the bottles come out. If you don't catch the bottles they fall on the floor and break. When you leave the factory you continue the same hand movements as in the factory!'¹⁰¹ This was an important lesson about factory work for Borroto, which stayed with him for life.

Not everyone agreed with the Plan of Integration, Guevara revealed, including members of the government at which level it had not been approved. But he took advantage of the institutional independence he was granted to experiment with the BFS – applying new measures to test their feasibility and analysing the results before determining whether or not to continue those policies. Through this process of learning by doing many of the projects Guevara initiated were consequently adapted in other institutions. He encouraged such institutional experimentation with the Plan of Integration:

To avoid scrapes and susceptibilities, it is preferable to use it, refine it, analyse the results and after to demonstrate it as the fruit of a complete experience to be considered for use, changed partially or totally, or to scrap the system. We have a set of ideas here – some expressed by specific comrades, others used totally or partially in other socialist countries – which in their entirety constitute new experiences in this

country. We will give a period of 15 days for every director to analyse the guidelines of the scheme and make the suggestions they consider necessary.¹⁰²

A commission should be established, he said, to compile the suggestions and opinions of the directors concerning the proposals.

Arcos was invited by Guevara to be the 'guinea pig' for the Plan of Demotion, giving up his post as director of the Light Mechanics branch and going down two levels into the EC of Graphic Arts to join the administrator of a factory which made signs. This factory was holding back the progress of what was otherwise an outstanding EC – falling behind the plan of production and rationalisation, with low productivity, poor discipline and absenteeism, with a high proportion of workers lacking sympathy for the Revolution.¹⁰³ Arcos set to work in November 1964. In the following bimonthly meeting in December, he was complimented by the EC director Gustavo Arango, who announced that under his administration the plan of production had been met and surpassed, the rationalisation process which was programmed over six months had been accomplished in one, a third work shift had been implemented using voluntary labour and the factory had been turned around by his example. It was a new factory, Arango said, 'with a great combative spirit and collective consciousness'.¹⁰⁴

Guevara had planned to join Arcos at the same time, working alongside Arango, director of the EC of Graphic Arts, within the Light Mechanics branch.¹⁰⁵ But in early November, Guevara went to the USSR representing the Cuban government and a month later he left for three months of state visits in Africa, so he never could participate in the Plan of Demotion. In April 1965, he left Cuba in secret for the Congo, and the Plan of Integration, like so many other policies in MININD, was abandoned before more than a handful of managers had taken part. Nonetheless, certain aspects of the spirit of the Plan were generalised throughout Cuban institutions – the pairing of colleagues so that everyone has an institutional substitute and the emphasis on intellectual and administrative workers doing voluntary manual labour, especially students and cadre of political organisations. The latter policy had been general practice since the beginning of the Revolution, but Guevara's Plan of Demotion had aimed to further systemise the practice instead of relying on periodic emulations or national mobilisations in periods of crisis.

In addition to the policies to achieve the cohesion of the BFS, promote the search for solutions for production problems and to integrate workers into management, other policies focussed on protecting and controlling workers more generally. These included efforts to improve work conditions in addition to the material results of the production process, and measures to enhance worker commitment at the unit level.

Health and safety

We have taken factories of the capitalist system where the most important point was to produce, especially in Cuba ... the conditions were very bad, very unhealthy. We have dedicated our efforts to improving life, the time that workers spend in the industrial plant. This will be one of our main efforts throughout the coming year.

Che Guevara¹⁰⁶

Guevara had a strong concept of human beings as both the means and the ends of socialism and communism. Production had to serve humanity, not enslave or oppress it. A fundamental pillar of BFS, he said, was the concept of 'the individual as the protagonist of the Revolution'.¹⁰⁷ *Nuestra Industria* gave prominence to the issues of hygiene and safety at work to draw workers' attention to these priorities. Each issue carried a drawing of a chaotic work centre with innumerable disasters waiting to happen. The reader who could list the most errors won a prize.¹⁰⁸

Guevara raised the issue with directors in ministry meetings. In February 1964, he complained that some administrators lacked consideration for the welfare and conditions of the workers. As an example, he recalled that during his visit to shoe factory a worker complained about the dust saying that he had requested a ventilator or to change positions because it irritated his asthma. When Guevara related this to the administrator saying it was brutal to leave a man with asthma working in the dust, the administrator replied that actually the man had tuberculosis, not asthma. This reflected a complete lack of sensitivity.¹⁰⁹ On visits in the provinces he had been dismayed by the lack of small investments to provide the workers with even a sit-down toilet: 'There is nothing to impede this; on the contrary, this is negligence and not knowing how to mobilise the people to resolve this type of problem.'¹¹⁰ In his final bimonthly meeting Guevara reminded directors that mankind was the great protagonist of evolution and insisted: 'we do not just dedicate ourselves simply to be producers, but we must consider the productive substance of work, which is man ... we must sacrifice what there is to sacrifice to carry out investments that assure hygiene and safety at work'.¹¹¹

The administrators' *Manual* dedicated a section to hygiene and safety at work, stating that socialist construction would see the rapid development of the productive forces and that the administrator was responsible for avoiding conflicts between efforts to increase production and the needs of the working class:

The administrators of factories are just not technical leaders of productive installations, but first of all they are leaders of collectives of workers, for whose health and safety they assume responsibility during their stay at the work centre, which in turn contributes to the peace and happiness in the workers' homes, sparing their

families from the sorrow and worry that work accidents always cause ... The most important factor of the productive forces is man, who makes the machines, tools, equipment and factories ... To obtain the results with the maximum productivity it is vital that work conditions and the workers themselves are in the best conditions to produce according to the needs of society.¹¹²

Health and Safety policies were implemented to protect workers from harmful machines, environmental risks and the danger of their own mistakes – to protect production, avoiding accidents which paralyse or affect it and to protect the economy from unnecessary costs and waste caused by accidents, such as unemployment compensation, broken parts, medical costs and reparations.¹¹³ The *Manual* detailed ministerial regulations on medical provision for workers and the coding system for products and work areas according to their characteristics, warnings about danger levels and the location of safety equipment.¹¹⁴

Regular health and safety inspections were integrated into administrative work: 'Inspection is the principal means to discover and improve defective conditions, risks, unsafe actions, etc.'¹¹⁵ Each EC had a health and safety inspector to monitor every work centre within its jurisdiction. However, each workplace also had a person responsible for regular inspections. These inspectors would examine and make recommendations on accident reports; the order of operations; the maintenance of machines, equipment and tools; the protection of machines; the conditions of floors, stairs and passageways; access to all places where personnel go; light, heat and ventilation; equipment to protect personnel; toilets and washrooms; reparation and conservation of the plant; and the possibilities of catastrophe, such as boiler, gas or vapour explosions; work in tanks or metal basins; and storage of inflammables, and explosives.¹¹⁶ To avoid taking a superior attitude, those responsible for inspections should

finish the inspection visit with a chat with personnel where they are informed of the general conditions in the plant and the collaboration necessary to improve them ... The person responsible for Hygiene and Safety should take advice in everything possible from the workers, technicians, department heads, etc. those who through their experience can contribute opinions that should be analysed, with the aim of making the most logical recommendations with the view to reaching a final solution.¹¹⁷

As well as commenting on problems in health and safety, the inspector should suggest concrete solutions and give a determined time period for their completion, which would be followed up to ensure that the measures had been taken as agreed. Three inspection forms were included in the *Manual* with details about how to fill them in.¹¹⁸ The concern for work conditions – both of

the worker and of the equipment – was not just conceptually important, but the procedures were institutionalised to monitor, assess and improve them.

Absenteeism

Do you think, gentlemen, that the working masses in a North American factory have affection for the owner? Absolutely no affection. And is there political vigilance in watching over production? No there is not, because there is a set of administrative mechanisms which when they fail in production allow administrative measures to be taken so that mister workman who is careless earns less, his own person receives the measure of his mistake, in a peaceful way

Che Guevara¹¹⁹

Under capitalism, fear of unemployment becomes a mechanism of social control and stimulates productivity via competition between labourers. In the early 1960s, Cuban workers who had toiled under capitalism suddenly found they had guaranteed employment – albeit in agriculture – rent and utility bill reductions, free education, training and healthcare provision for themselves and their families, a food ration and prices frozen. The consciousness and values of these workers had been moulded by capitalist social relations. New attitudes and cultures cannot be created overnight. Inevitably, absenteeism was a serious problem, the epitome of the malaise and low productivity which hindered economic development and the transition to socialism. The challenge of reducing absenteeism was confronted in every measure and policy which attempted to engage the labour force and promote workers management. However, some MININD directors began to formulate specific policies to reduce absenteeism directly.

Guevara underlined this problem in his seminal speech to ministry workers in October 1961. Despite the national campaigns against absenteeism, complained Guevara, it even existed in the ministry building – direct absenteeism: people who just did not turn up to work, and indirect absenteeism: arriving late, leaving on time and not completing the work properly. Time lost was part of the indirect costs of production, he said, adding that it was a significant sum. He had realised how serious this problem was within the ministry during a recent tour of the offices in the ministry:

there were many people missing, its true that the eighth floor is planning, and people had to go to specific places, but there were other people who listened to the radio, there were others who were chatting and what is more when I started to go round one by one ... immediately the people who had been missing started to return and get on with their work, or if not everyone was in a meeting with the comrade Lavarne. It seems that the comrade Lavarne was suffocating with all the employees

of that floor who he was meeting with, everyone that was missing was said to be in that meeting.¹²⁰

In the spirit of self-criticism which characterised that speech, Guevara took the blame, as minister, for not having a system in place to be kept aware of the reality. He viewed the question of absenteeism not just from the perspective of production costs, but as an ethical question as well. Attempting to demonstrate how these apparently individual choices and patterns of behaviour affect relations at a much broader level, Guevara reminded ministry workers about the sacrifice made by the Chinese in order to show internationalist solidarity with the Cuban people. Despite their relative backwardness Chinese people worked industriously, donating massively in aid and trade to help consolidate the Cuban Revolution:

we do not have the right to listen to the radio in work hours, we do not have the right to squander a moment of production when there are 650 million people, each one of them who gives a bit of their share of fabric, or even a grain of rice, things they need to satisfy the main needs in life, and they give away so the Cuban people have non-essential goods ... without rice we could live perfectly well and here in Cuba our level of consumption of non-durable goods is infinitely superior per capita to most, if not all, socialist countries, in shoes, hides, soap ... automobiles, petrol ...¹²¹

In March 1962, the director of the EC of Cement, Ramírez, told the bimonthly meeting about two non-financial approaches developed in his enterprise to tackle absenteeism. The first was a Commission for Illness – a group of factory workers selected by the trade unions who visited those off sick. Presumably if there was no real ailment the homebound worker would be embarrassed by his colleagues into returning to work. The second was a section called ‘absentee of the month’ within the factory’s production bulletin, which provided the personal information on this individual, minus the name. Readers were invited to guess the identity of the offender, which would be revealed in the next month’s bulletin. Ramírez explained that ‘This provokes tremendous discussions about who it is or could be.’ These discussions among the workers meant they were openly articulating the problem of absenteeism and evaluating their colleagues in terms of attendance, thus raising consciousness of the severity and consequence of the problem, as a precondition for tackling it. Absenteeism decreased as workers avoided being named and shamed in the bulletin. Ramírez continued: ‘we put a graph on the board with the absenteeism of the previous months and we are seeing a real reduction in absenteeism in the factory; it has been taken up positively, the workers are no longer being absent for the sake of it’.¹²²

Borrego stated that in general absenteeism was a phenomenon among the higher income level workers, those who had worked within US corporations and who had benefited from policies devised to divide the working class through differential pay awards, reducing the trade union movement to a permanent 'economistic' struggle for salary increases.¹²³ With salaries frozen, and then controlled and with the new salary scale introduced in 1964, these workers had benefited least from the upheavals caused by the Revolution. They pursued their individual self-interest, lacking identification with the production needs and social and economic goals of the Revolution. Success in tackling absenteeism depended on an apparatus of administrative compulsion, in addition to general success in fostering a collective consciousness towards production. Both direct and indirect absenteeism remain serious obstacles in Cuba, indicating that the dilemma of motivating production without dependence on capitalist levers whilst maintaining universal social welfare provision has still not been solved under socialism. Guevara and his MININD colleagues had initiated a search for solutions to this problem.

Personal records

From February 1964 a new universal system of personal records was implemented nationwide in Cuba. Workplace records held mainly administrative details – papers relating to the workers' health problems (for example, medical certificates), and other official notes. In May 1964, Jesus Suárez Gayol, director of the Cuban Institute of Mineral Resources, described how his institute was expanding the function of the records to induce commitment to production from the mass of workers. Positive reports about their effort and performance were added to the record, as were reports of any indiscipline, with a copy sent to them also:

we have some practical examples of how positive this is. Equally, we have taken this issue to workers in Production Assemblies in the work centres. The importance of their record and waking the consciousness in workers about looking after their record, their labour history, will definitely serve them and serve the enterprise in deciding on any claims and selections for more qualified posts ... this has caught on in the workers spirit – to care for their personal record – taking care of their labour history in the work centre.¹²⁴

Guevara asked other directors for their opinion of the system proposed by Gayol. One director responded that in his industry before the Revolution the American owners had carried out promotions on the basis of such records, using them as a threat to control workers. Guevara added caustically: 'We will have to send people to the United States to learn how to treat the workers.'¹²⁵

But Suárez Gayol denied his system was comparable to that used under capitalism. It was not to be imposed as a threat, but discussed with the workers, it should be explained that their record was how they would be judged on their contribution to society. People had shown such concern for their personal record that they had preferred an administrative or economic sanction, even to be sent to Guanahacabibes labour camp, rather than have something noted on their personal record.¹²⁶ In addition, said Gayol, when it came to selecting vanguard workers this would help judge who fitted the criteria, based on written documentation not just verbal recommendations.

Guevara concluded that no administrative decision could be reached on this proposal, because it would inevitably be bureaucratic. The decision of whether or not to adopt this line towards personal records would be taken collectively by the workers. He urged those directors interested in utilising this method to discuss it in their Production Assemblies with the mass of workers, and in six months' time they could discuss the workers' reactions and/or experiences in applying this method.¹²⁷

A little over six months later, in December 1964, Guevara asked directors for their experiences with the personal records. Two directors responded. The first said the idea was not well received by people in the enterprise. However, the use of negative records had been applied successfully in the case of office workers who were being sanctioned for their mistakes and who had ignored the instruction to carry out manual labour in production. So the personal records had only been used in a negative way for individuals under sanction. The director admitted: 'we haven't used this process for the good things which is really a failing we can highlight'.¹²⁸ The second director had met with the EC's administrators and heads of personnel before introducing the personal records for technical personnel, which was the group of workers who had presented the most problems:

It has made a good impact and we are improving our work a lot. The technicians know that they are evaluated and that we discuss with them, and we have applied a system in the units of production so every three months they discuss the information about their work with us. We also do this with the *compañeros* in administration and now we are promoting it among all leadership personnel before taking it to other levels.¹²⁹

Several policies were already applied in MININD to punish 'indiscipline' and mistakes by management personnel in MININD. However, the mass of workers were exempt from these policies. The use of personal records was an attempt to foster the same accountability to social production among them. What stands out is the experimental atmosphere within the ministry in

searching for new policies to strengthen the key tenets of the BFS – administrative control with technological progress plus consciousness and a sense of work as a social duty.

CONCLUSION

[w]e are attempting to develop to the maximum the consciousness of workers at all levels of production to think of work as the highest expression of being human, searching for integration in this way in work that is freed from the fetters of the need of workers to earn their bread ... so workers at all levels in our Ministry work because it is their social duty.

*Memoria Anual 1964*¹³⁰

This new attitude depended on workers appropriating the production process for themselves and, via self-management, truly becoming the owners of the means of production. The policies experimented with and implemented within MININD, as part of Guevara's BFS – bimonthly meetings, ministry publications, Committees for Spare Parts, the Movement of Inventors and Innovators, the campaign to Construct Your Own Machine, factory visits, Advisory Technical Committees, Production Assemblies, Committees for Local Industry, the Plan of Integration, health and safety procedures, policies to tackle absenteeism, and the personal records – aimed to integrate workers into the management of production, to harness their experience and creativity to resolve problems and rationalise production and to induce them to identify with the means of production as their own. For Guevara they were mechanisms to equip the working class for increasingly decentralised and direct control of production. This was vital for the transition to socialism, and from socialism to communism, as well as to overcome the practical problems of the production process.

It was a difficult dialectical process – to decentralise control to workers nurtured under the antagonism and alienation of the capitalist system and expect them to take over management, subjugating individual self-interests to the wellbeing of society as a whole, increasing work effort and effectiveness without relying on material incentives and other capitalist levers. Often then, in the process of creating a new consciousness and new social relations, policies were devised and emanated from the central administration, headed by politically conscious leaders motivated by ideological goals in the interests of the whole working class. The policies complemented the educational and technical training apparatus and financial and accounting aspects of the BFS serving to undermine the operation of the law of value and emphasise the role of consciousness and human beings at the centre of production. It meant

production would be determined according to social and political rationale, rather than just the economic rationale characteristic of capitalism.

Guevara's emphasis on integrating workers into the technical and managerial aspects of the economy contributed significantly to a conceptualisation of how socialist society is to be built – promoting the self-management of the Cuban masses. It must be recognised, meanwhile, that the persistently punitive US blockade, terrorist attacks and political machinations against Cuba have limited the feasibility of decentralising management to the Cuban masses. It has been necessary, therefore, to integrate workers from the masses into the central apparatus of government. The decentralisation to which Guevara aspired has not yet been achieved.

7

Science and Technology

Greyhound racing arrived in Havana during the decadent 1950s. In 1951, the Havana Greyhound Kennel Club opened a track for dog races in Mariano, near the Havana Yacht Club, to provide gamblers with evening entertainment once the horse races had packed up for the day. With the races came the first basic computer, a totalisator – a mechanical system running pari-mutuel betting, calculating and displaying payoff odds and producing tickets based on incoming bets.¹ When the revolutionaries seized power in January 1959, this greyhound betting machine was the only computer in Cuba. A second computer was imported from England in the early 1960s, an Elliot 803, and used by the Ministry of Industries (MININD). The big US corporations in Cuba, including the oil refineries, had IBM punch machines, but not computers. Eugenio Busott, MININD's director of General Services, recalled his last conversation with Guevara in 1965:

I was in the foyer of the Ministry next to an IBM machine, the old type that used punch cards. Che came by and we started to talk. He said to me: 'What do you think about making one of these machines?' I said: 'OK *comandante*, we will start working on it.' He was really enthusiastic, and I was very enthusiastic. But that never materialised because he left.²

With only two computers on the island, and in an economy dominated by a labour-intensive agricultural sector, Guevara already understood that electronics and automation were technological fields of major productive significance for humanity – and hence for achieving the efficiency necessary for socialism. In the first bimonthly meeting in MININD, in January 1962, he announced:

We are entering the era of automation and electronics. We have to think of electronics as a function of socialism and the transition to communism ... Electronics has become a fundamental political problem of the country. Today and tomorrow cadre must be prepared so they are ready in the future to take up the next great technological tasks and for the automation of an ever-increasing part of total production, the liberation of man by means of the machine.³

Guevara witnessed how advanced capitalist corporations used automated systems to maximise their economic operations. He understood the potential of these techniques in a small centrally planned socialist economy. The technical capacity for computer based planning operations did not exist in Cuba in 1959, but confident about its progressive potential, Guevara set out on the first steps in that direction. For him, socialism was a phenomenon of both technology and consciousness – adopting the latest scientific and technological developments would represent a major advance in at least half of the equation. It would facilitate productivity gains based on administrative control and technological innovations, not by an appeal to workers' self-interest, via material incentives, and other elements of capitalism:

We cannot follow the development process of the countries which initiated capitalist development, 100 or 150 years ago – to begin the slow process of developing a very powerful mechanical industry, before passing on to other superior forms, metallurgy, then chemicals and automation after that. We have to burn through stages. And conscious of our backwardness, conscious of our economic and technical weaknesses, try always to make use of the best world technology, without fear of having the best world technology here, and as quickly as possible, develop technicians capable of operating these plants.⁴

Under capitalism, noted Guevara, competition drove the application of science and technology to industrial development, constantly revolutionising the productive forces. Given the level of underdevelopment in 1950s Cuba – outside the pockets of advanced foreign-owned industries – an immediate rise in productivity could be achieved just by rationalising production, improving wealth distribution and offering incentives to workers. However, the precondition to sustained economic development was research and innovations. How could this be achieved in an underdeveloped country emerging from dictatorship and imperialist domination via violent revolution – blockaded, attacked and in transition to socialism? The socialist government had to find a method for fostering the application of science and technology to production without relying on the law of value, competition and the profit motive. In the search for solutions to this challenge Guevara set up an apparatus within MININD to institutionalise research and development for industrial production. It was integral to his Budgetary Finance System (BFS).

ADVICE AND TRADE: ECLA AND THE SOCIALIST BLOC

The son of a famous Cuban poet by the same name, Regino Boti read his economics masters degree at Harvard University, going on to co-found the

UN's Economic Commission for Latin America (ECLA) in 1949. In 1956, he founded Cuba's first school of economics and sent a message of support to Fidel Castro who was in exile in Mexico. In January 1959, Boti returned to Cuba to become the Revolution's Minister of the Economy, later renamed the Central Planning Board (JUCEPLAN), in the Revolution's first moderate government.⁵ Soon after, an ECLA mission arrived in Cuba. Its economists promoted an Import Substitution Industrialisation (ISI) strategy for economic development, an approach common in Latin America since the late 1940s.⁶ During Guevara's trade mission to the socialist bloc in October 1960, factories were purchased according to a list of finished products needed in Cuba, with the intention of replacing imports. Within a year and a half it was clear that this criterion had been disastrous. Guevara explained the mistake:

We lacked due emphasis on the exploitation of our own resources. We worked with our vision fixed on the substitution of imports of finished goods, without seeing clearly that we can't produce those articles without having the raw materials they need ... We continue to be largely dependent on foreign trade to resolve our problems, but the possibilities of supply by foreign trade are also limited in the industrial plane, because of the huge development of other sectors of the economy and by the life of the country which demands materials from abroad.⁷

Guevara listed factories for brushes, screws, pickaxes and shovels, electric solders, barbed wire, among others, which Cuba had purchased because the finished product was needed, but which relied on imported materials to manufacture. This was a costly mistake – the US blockade was cutting off imports from the capitalist world. Pursuing rapid industrialisation was clearly idealist and in August 1961 the National Production Conference confirmed that sugar would continue its historic role as principal export, to secure vital imports, serving as the basis of accumulation for longer-term investments in industry and social welfare. Guevara's industrialisation strategy was to be based on the manufacture of endogenous natural resources, including the industrial application of sugar cane. He envisaged a diversified chain of production with both horizontal and vertical integration:

to develop textile factories and have to buy the thread is an absurd policy. We have to develop cotton together with the textile factory; have to develop iron together with the factories that will consume iron ... From sugar everything should be extracted. Huge possibilities exist of converting sugar, as an article of consumption, into a secondary product. Just as lard is a secondary product of pork in the United States, we could reach the point in sugar production so that sugar will serve as a primary material.⁸

Compounding the mistakes associated with the ISI policy was the relative backwardness of equipment purchased from the socialist bloc compared to that of the advanced capitalist countries. As the US government pressurised other capitalist countries not to trade with Cuba, *realpolitik* forced Guevara to accept technology which was sometimes two decades behind that existing in advanced sectors of Cuban industry in 1958. Edison Velázquez, director of the EC (Consolidated Enterprise) of Nickel, an area of great industrial potential prioritised by Guevara, said:

Many factories turned out to be inefficient, because we depended on what the Russians and the socialist camp had achieved and they were behind. You could say these factories were obsolete. This wasn't Che's fault. The Yankees wouldn't sell us factories. Che said 'These factories are obsolete, but they are factories' – and we had to make more effort, it was more work for the country.⁹

On the other hand, the support received from the socialist countries which provided credit, advisors, technicians and other specialists, was essential. In 1962, Guevara announced:

The Soviet Union granted us 100 million pesos for the iron and steel industry, some electrical plants, a refinery and for geological prospecting of a quarter of the national territory. Czechoslovakia did this for an automobile plant. China granted us 70 million for the construction of 24 plants of various types; Romania 15; Bulgaria 5; Poland 12 and GDR [German Democratic Republic] has offered 10 for 1963. The most important plants contracted, in addition to those already cited, are: a shipyard that will be made with Polish assistance; a nickel plant, with additional Soviet assistance; the textile factories acquired from the People's Republic of China and GDR and those of cement.¹⁰

All MININD's vice ministers and directors were assisted by socialist bloc specialists or Latin American communists. Guevara cited the assistance of USSR and Romanian technicians in the Cuban petroleum industry, Czechs who helped establish Cuba's Academy of Sciences, Bulgarians and Chinese who assisted in the agricultural branch, Koreans who worked on mechanical plants, Hungarians in electronics and the glass industry: 'all the socialist countries with the capacity to do so have contributed, and contribute day after day to our Revolution, with identical enthusiasm'.¹¹

These technicians and engineers trained Cubans to operate new plants and technologies. By the end of 1964 there were 640 foreign technicians working in MININD, 492 of them from the socialist countries.¹² Most assisted with training or worked in the research and development institutes. In 1964–65, around 2,000 Cubans received on-site training for plants under construction.¹³

Meanwhile, hundreds of Cubans went to the Soviet bloc. On 31 December 1964, MININD had 1,271 Cubans training abroad, of whom 858 were studying in universities, 222 were receiving technician training and 191 were getting 'worker qualifications'.¹⁴ This assistance, Guevara said, would create Cuban technicians who would construct Cuban factories built with machines designed by Cubans, using domestic raw materials and processed with Cuban technology.¹⁵ In the short term, however, he acknowledged the advantage enjoyed through socialist bloc assistance in softening the blow of the US blockade and helping to consolidate the Revolution:

We work in conditions infinitely superior to those of the first socialist country. The Soviet Union did this alone; without friends, without credit, surrounded by ferocious adversaries, in the middle of a bitter struggle, even within its own territory. We do this in far superior conditions than those of the People's Republic of China, and those of the people's republics of Europe, which came out of destructive war and without the Soviet Union able to give them all its help because it was also engaged in a enormous task of reconstruction ... and we also do it starting from a relatively comfortable situation in that the masses' educational, technical, cultural and economic level is not as backward as that faced in other fraternal countries.¹⁶

Guevara did not criticise the Soviets for the relative backwardness of their technology *per se*. Rather, he was critical of the contradiction between the high level of research and development applied to military technology and low investment in improving civilian production. In addition, he objected to their ideological resistance to transferring the most advanced technology from the capitalist world: 'the error of not taking the highest technology at a given moment has cost a lot for some socialist countries; it has cost them in terms of development and in terms of competition in the world market'.¹⁷

Cybernetics was one example. Invented by Norbert Weiner, a US mathematician studying artillery fire during the Second World War, cybernetics combines aspects of physiology and human anatomy to study communication and control, involving regulatory feedback in living organisms, machines, organisations and combined systems – 'socio-technical' systems such as computer-controlled machines, automata and robotics. Jorge Ruiz Ferrer, who collaborated with Guevara from 1959, shared this enthusiasm for cybernetics, describing himself as one of the few people in Cuba at that time capable of discussing it with Guevara.¹⁸ Criticising the Soviet's rejection of cybernetics on ideological grounds, Guevara said:

For a long time cybernetics was considered a reactionary science, or pseudo-science. Naturally cybernetics has reactionary philosophical implications if you want to give it them, but that aspect that does not interest us ... cybernetics is a branch of

science that exists and that should be used by man. It has not been developed with sufficient effort. However, the North Americans have worked with this a lot – they have worked a great deal at its practical industrial application to the extent that they have many things that are automated. We should work for rapid mechanisation and for automation now without fear of unemployment.¹⁹

Guevara insisted that technology has no ideology *per se*: ‘a tractor has a function: to plough ... and if we are going to make technology, why are we going to take the technology of a socialist tractor in place of a capitalist one, if the capitalist one is better?’²⁰ He cited Polish economist Oscar Lange’s prediction back in 1953 that new countries entering socialism would adapt the modern capitalist technology they inherited into instruments in the service of the people, speeding up the construction of socialism.²¹ The origin of the BFS lay in the capitalist corporations of pre-Revolution Cuba and it was therefore more progressive than the Soviet Auto-Financing System (AFS) which developed out of 1920s pre-monopoly Russian capitalism.

Evidently there was some success in Guevara’s resolution to not repeat those mistakes. In summer 1964, inaugurating a factory for domestic utensils – one of at least seven factories opened within two months – he described equipment installed in the factory as world-leading: ‘together with our Czechoslovak comrades, we have not vacillated in acquiring some special machinery from other countries, including capitalist ones when it was most useful because that country had best developed this specialised technology’.²²

Added to the relative backwardness of Soviet technologies was the problem of technological incompatibility. In 1961, Tirso Sáenz had been director of the petroleum industry. He explained the problems resulting in that industry from the blockade and the consequent shift in trade relations:

Refineries are designed according to the type of oil they are going to process. Soviet petroleum is different from the Venezuelan oil that we received before – it had a higher content of salts and sulphur. The corrosion problems were terrible. The crude was eating away all the pipes and equipment and we had the blockade so we couldn’t get spare parts from anywhere.²³

Ultimately, Guevara’s solution was to overcome trade dependency by fostering industrialisation based on endogenous resources.

Proposed lines of development

Five months into his leadership of the Department of Industrialisation, Guevara projected future lines of development, grounded on the specific conditions of

the island and reflecting fields of international technological progress. He told Havana University students:

we have initiated a process of development that includes six very important and basic branches of production which are: heavy chemicals, organic chemicals starting with hydrocarbons from sugar cane, minerals, combustibles, metallurgy in general and the iron and steel industry in particular and the products derived from our intensive farming. But we have seen the sad reality that the training given in the country's universities is not adequate, neither in orientation nor in quantity, for the new needs of the Revolution.²⁴

Two years later, he wrote that '*Prima facie*, we orientate ourselves towards four lines of development: metallurgy, naval construction, electronics and *sucroquímica*.'²⁵ The three essential prerequisites for such developments were the rational exploitation of natural resources, creation of a mechanics base and training at all levels. The ambitious development strategy aimed to maximise Cuba's self-sufficiency by using the island's natural resources to create manufacturing sectors as a preliminary step towards the introduction of automation and an advanced chemical industry.

Theoretically, the lines of development proposed by Guevara were feasible, in that they recognised the natural resources and historical legacy of the Cuban economy. Cuba holds rich metal deposits, especially nickel, which could form the material basis for the production first of produce much needed spare parts and later of capital goods. As an island, hugely reliant on overseas trade for survival, developing a merchant fleet would save Cuba millions in hard currency paid to other countries for transporting imports and exports. The precondition for this would be the development of the iron and steel industry. Using sugar cane as a primary material for manufactured and chemical goods would increase the value added to Cuba's exports based on the historical mono-crop. Furthermore, Guevara argued that countries that could master electronics and automation technology would be in the vanguard of international development.

To begin to overcome the lack of adequate training and infrastructure for these tasks in the existing academic institutions, Guevara set up research and development institutions within MININD, focusing on sugar cane derivatives, minerals and metals, the chemical industry and agricultural byproducts, technological innovations and automation. His intention was to establish an institutional framework to begin experimentation at both ends of the production chain – raw materials and manufacturing simultaneously. Not all these projects were feasible in the short term, however; more important

than the productive achievements was the methodology introduced – applying science and technology research to production.

To implement his long-term vision, Guevara worked towards strategies that transcended the annual plan. An Office of the Perspective Plan was created within MININD to prepare a development plan for 1965–70, projecting statistics forward and determining the priority lines of production. A young Cuban economist, Miguel Figueras, was transferred from JUCEPLAN to become director of the Perspective Plan from 1963, taking over from *Ciro Oyarzún*, a Chilean civil engineer who went on to become director of Investments. The team consisted of fewer than 20 experts and administrators. Figueras recalled among them Dr Mario Fleitas, an electrical engineer and university professor who had trained in England, and another who was a chemical engineer with an economics masters degree from the US – professionals trained in the most advanced capitalist countries. They studied industrial development together with the role of new technologies, using the Elliot 803 computer to formulate their projections. For up-to-date information they relied on technical and scientific journals passed on to them by technicians or libraries which had subscribed since before the Revolution.

In this they were assisted by a small team in the Department of Scientific-Technological Information set up within MININD in 1962, the first of its type to exist in Cuba. The Department collected specialist magazines and scientific abstracts from anywhere in the world, translated them and conveyed information about the latest technologies to specific sectors within industry. The ECs or research institutes could also direct the team to search for the specific information they needed. *María Teresa Sánchez*, the Department's director, explained:

People would go to Che with ideas, for example, they could say: 'I have discovered continuous movement' and we had to find out if it existed and if it was possible. We used magazines of abstracts for medicine, technology, pharmacology. In the beginning I had to submerge myself in the little that existed in Cuba. Later we developed exchanges with friends in other countries ... We did all this work by hand. We didn't have a computer or an IBM machine.²⁶

The Department began with four people, but gradually expanded to include an archivist and sections for photography and translations. *Sánchez* said: 'They sent me a group of some of the first youngsters to learn languages such as Czech, French and English ... I don't remember anyone studying Chinese at that time.'²⁷ They also assisted the research and development institutes to set up their own information centres.

In March 1965, the Perspective Plan team produced a two-volume document. Figueras recalled: 'It was the last night that we spoke when Che revised the final version. He said "Tomorrow you go with my guards to get it printed in secret; 25 copies and you give them to me."²⁸ One month later, Guevara left Cuba and MININD was gradually divided into separate ministries.

Nine research and development institutes or projects were set up within three years in MININD:

- 1961 Commission for Mechanisation of the Sugar Harvest
- 1961 Cuban Institute of Mineral Resources
- 1962 Cuban Institute of Mineral and Metallurgy Research
- 1962 Office of Automation and Electronics
- 1962 Cuban Institute for Technological Research
- 1962 Ciro Redondo experimental farm
- 1963 Cuban Institute for Research into Sugar Cane Derivatives
- 1963 Cuban Institute for the Development of the Chemical Industry
- 1963 Cuban Institute for Machinery Development

In 1964, research institutes in MININD accounted for 53.2 per cent of the ministry's total costs, at 42,566,100 pesos, reflecting how highly they were prioritised. Tirso Sáenz was Vice Minister of Technical Development, responsible for all these structures except the Commission for Mechanisation which was created by MININD's Office of Special Issues – set up specifically to resolve urgent problems free from bureaucratic constraints. Sáenz said: 'Every one of these institutes had a reason to be created, some of them linked directly with the basic lines of development; metallurgy, naval construction, electronics and sugar cane derivatives.'²⁹ The institutes were located outside the ministry building but they were integrated under the organisational and financial structure of the BFS, receiving a planned budget for investments and salaries, assuming the same principles, but operating with some independence.

For the purpose of analysis, the research apparatus has been divided into three categories: first, those concerned with the sugar industry; second, those involving the extraction and exploitation of natural resources – minerals, metals and agricultural products – excluding sugar; third, naval construction, electronics and automation. Sáenz also pointed out that 'All those institutes were created with important support from the socialist countries. That has to be said, because it would be unjust not to recognise that. Che was aware of that.'³⁰

THE SUGAR INDUSTRY

Without sugar, there is no nation.

José Manuel Casanova, Sugar Mill Owners' Association

Because of sugar, there is no nation.

Raúl Cepero Bonilla, Cuban economist

Without workers, there is no sugar.

Lázaro Peña, Cuban Workers Confederation³¹

Cuban historian Manuel Moreno Fraginals prefaced his seminal work on the Cuban sugar industry with the statement: 'without an exhaustive study of the sugar economy, there is no possibility of interpreting Cuban history'.³² Nonetheless, here it will suffice to cite two fundamental characteristics of the sugar industry in order to appreciate the motivation, significance, obstacles and achievements of MININD's attempts at modernisation. First was the domination of the Cuban economy by the sugar industry; 75 per cent of arable land was controlled by sugar companies, half of which they left fallow.³³ They employed 25 per cent of the Cuban labour force, but only 25,000 full time with up to 500,000 workers hired for the labour-intensive harvest lasting two to four months, and afterwards dismissed for the *tiempo muerto* (dead season). Underemployment was integral to the sugar industry and plantation workers constituted a rural proletariat with a history of class-conscious militancy. Sugar and its byproducts, accounted for 86 per cent of exports, making Cuba the world's largest exporter of sugar in the 1950s.

Second was the domination of the sugar industry by US interests. In the 1920s, US-owned sugar mills produced and processed nearly two-thirds of the Cuban sugar crop. Following the Great Depression of 1929 and the subsequent retraction of US capital, domestic ownership of the industry increased to 59 per cent by 1955.³⁴ However, 80 per cent of Cuban sugar industry exports were shipped to the US in exchange for commodity imports which dominated Cuba's internal market. The US-imposed sugar quota contributed to the stagnation of the industry, as a disincentive to investment and as an instrument of political-economic control over the Cuban government. The last new sugar mill was founded in 1926, and in 1951 the World Bank warned: 'Cuba's standard of living ... depends mainly on an industry which stopped growing many years ago'.³⁵ For Cubans, the sugar industry was associated with slavery, racism, poverty, unemployment, underdevelopment and imperialism. The countryside was populated by *bohío*, rural huts made from sticks and mud – 75 per cent of them one-room dwellings, with earthen floors, no power or electricity, where barefooted children worked, many with empty stomachs full of parasites.³⁶

The first instinct of many in the post-1959 government was to run the industry into the ground, replacing it with diversified agricultural production,

manufacturing and heavy industry.³⁷ However, as Cuba integrated into the annual plans of the socialist countries for trade purposes, the government fell back on a development strategy where sugar exports were the mainstay of capital accumulation. In 1963, Guevara explained the decision:

The entire economic history of Cuba has demonstrated that no other agricultural activity would give such returns as those yielded by the cultivation of the sugar cane. At the outset of the Revolution many of us were not aware of this basic economic fact, because a fetishistic idea connected sugar with our dependence on imperialism and with the misery in the rural areas, without analysing the real causes: the relation to the unequal balance of trade.³⁸

Given favourable trade deals with the socialist bloc, based on prices above the world price of sugar, the revolutionary government believed it had redressed the unequal balance of trade.³⁹ As long as sugar production remained pivotal to Cuban economic development, Guevara was determined to mechanise its cultivation and develop a secondary manufacturing and chemical industry on the back of it.

There were three incentives to mechanise the sugar cane harvest. First, the shortage of *macheteros* (cane cutters) following the post-1959 rural–urban migration as real wages rose and employment was created. Voluntary labour was mobilised as a short-term solution. A total of 200,000 volunteers joined the harvest in 1961. The long-term solution was mechanisation. Second, to humanise the work so that in the near future, Guevara said: ‘those who speak of cutting by hand, loading by hand, would be considered to be proposing inhumane, bestial work, something from the past which could not return’.⁴⁰ Third, to cut the costs of production and raise productivity to, in Guevara’s words, ‘give us the opportunity to compete in the war of prices that the capitalist distributors wage against us. Right now, the struggle to lower the costs of production of sugar is of primary importance as an industrial task’.⁴¹ This would be achieved by mechanisation of the harvest and the development of a derivatives industry to increase the value added to sugar as a raw material. Alfredo Menéndez recalled how Guevara’s personal experience in the cane field strengthened his resolve to mechanise the harvest:

It was a hot day ... It was already eleven in the morning and by this time everyone was tired, but they had not finished cutting parts of the *cañaveral* [cane field], which means that the cane can’t be picked up. Che sat down to rest in the shade. When people saw this they stopped working too. I explained to him why you had to finish the *cañaveral*. He said: ‘Damn, I am going to get up and cut cane; but this is slave’s work, this has to be mechanised!’⁴²

Attempts pre-1959 to mechanise the sugar harvest had been blocked by resistance from *macheteros* who relied on this backbreaking work to survive.⁴³ For example, a Soltan cane cutting machine was imported by the large Agramonte sugar mill in Camagüey, but the workers refused to use it and it was abandoned for years. The Francisco Sugar Company had begun to build equipment to export *azúcar a granel* (crude sugar transported in bulk).⁴⁴ One of these was a warehouse in Las Tunas and another a terminal in the port at Matanzas, but workers obstructed their use. It was the same with the *centros de acopio* (centres for dry-cleaning sugar cane) under construction in Camagüey.

Paradoxically, the technical characteristics of the harvest meant mechanisation could reduce the efficiency and profitability of the industry. This is because the ratio of dead weight (soil and straw) to sugar falls if the cane is hand-cut and stripped of excess by the *macheteros* in the field before it enters the mill.⁴⁵ The labour-intensive work made the industrial processing more efficient. Mechanically cutting the cane, or hand-cutting but mechanically retrieving it without manual cleaning, necessitates an additional cleaning process off the field and as cane covered in excess weighs more this adds to transport costs. Furthermore, mechanised cutters tend to damage cane so it has to be replanted more frequently. These problems could have been overcome pre-1959, but only with serious investment in research, capital goods and transportation infrastructure. That would have raised the costs of production for private capitalists, while the plentiful supply of cheap labour kept costs down. Most of the value added to sugar was in refineries and sugar-based manufacture, largely controlled by US interests who lacked incentives to mechanise the harvest.

The minor feats accomplished by Guevara's mechanisation project were perhaps more significant in assuaging resistance to mechanisation than in productive results. Militant sugar workers dropped their resistance to mechanisation because they were confident that the Revolution would provide alternative employment and social welfare. As Miguel Ángel Duque de Estrada Ramos, head of the Office of Special Issues which set up the mechanisation task force, explained: 'In the epoch of the Revolution, these machines did not mean unemployment.'⁴⁶ Young *macheteros* moving into Havana to study and work would not want to return to manual labour in the countryside – they stopped opposing mechanisation and *macheteros* themselves contributed to the project to construct cutters, retrievers and cleaners organised under a task force in 1961.

Commission for the Mechanisation of the Sugar Harvest

Have you seen film footage of Che cutting cane? That was one of the first prototypes. He was struggling to breathe. So many people were sceptical that Che wanted to show it was a possibility and he knew that if he went to cut the cane then the

spotlight would be on it. But he had to pay a price for that. The dust from the sugar cane was terrible for him. Che was one month, 30 days cutting cane, with a terrible asthma attack!

Tirso Sáenz⁴⁷

The Commission for the Mechanisation of the Sugar Harvest was set up in early 1961 and headed by Duque de Estrada and Alfredo Menéndez, director of the EC of Sugar. Guevara authorised them to offer material incentives to mechanics in the sugar mill workshops throughout the island to begin developing machinery.⁴⁸ The first problem was the lack of materials. The blockade was already hurting and the mechanics base which was fostered by Guevara around 1963–64 did not yet exist. Duque de Estrada pointed out: ‘Che knew the task of mechanisation would take a long time, but he believed that you had to make a start quickly in order to complete it.’⁴⁹

It took nine months to create an enterprise to construct the machines, but with cooperation between the mechanics and the sugar mills and with the assistance of the high level engineers from the Soviet Union, Czechoslovakia, Hungary, Argentina and Bulgaria, by the start of the 1962 harvest the Commission had built more than 500 cane cutters and 500 *alzadoras* (retrievers). The *alzadoras* were a much simpler design than the cutters and more successful from the first moment. They picked up the piles of cut cane to load onto the mill transportation. *Macheteros* were traditionally paid piece-work, so initially they feared that the *alzadoras* would disrupt this system, but a solution was found which honoured the historical piece-work system.⁵⁰ In total, 5,000 *alzadoras* were produced, leading to productivity increases for *macheteros* who were no longer delayed by loading the cane – a task which had consumed up to 40 per cent of their labour.⁵¹

Despite the blockade, Guevara managed to import one US and one Australian cane cutter to serve as prototypes. The engineers examined how they functioned, working to adapt the design to build on top of tractors which the Revolution was importing from the socialist countries.⁵² Duque de Estrada explained the complications involved: ‘Some machines only work on erect cane, others won’t pass over ditches in irrigated land, and stones can break the blades of the machines. Adapting the cutters to Cuban conditions was a long process.’⁵³ However, the Commission had no intention of working towards perfection before introducing the cutter to the harvest. The first version of the machine was the simplest possible and it had problems – but it was a start and 500 were used in the harvest of 1962–63. Guevara pioneered tests on the cutter, so he was well aware of its deficiencies. Speaking to sugar workers mid harvest after six hours of cutting cane on the machine in the morning and ten hours the previous day, he joked about his ‘mania for criticising whenever I find myself with a microphone’, before complaining that ‘there has not been enough tenacious and

sufficiently enthusiastic work with the machines'.⁵⁴ He described the cutters as in the experimental stage, still liable to frequent breakdown, especially with inexperienced operators and he explained initiatives underway to improve them, which would increase as every new operator contributed refinements: 'The cutter, as it is today, is cutting cleaner than the average *machetero*', he announced, meanwhile urging the workers to make constructive criticisms to help improve the machine.⁵⁵ The previous Monday, he revealed, the machine blades had broken, injuring a *compañero* who had not taken precautions: 'the machine is dangerous', he warned.

When the sugar workers applauded him for cutting 45,000 *arrobas* in one week (about 500 tons), he replied: 'The point is not to applaud, but to give you an example, to throw out my record so that you break it tomorrow. 45,000 *arrobas* – a new operator, without attending the school!'⁵⁶ Guevara's commitment to leading by example as a management technique – engaging workers via fraternal competition, or socialist emulation – meant he engaged on a practical level in daily tasks alongside them. His final record was to cut 22,000 *arrobas* in one day.⁵⁷ Borrego recalled that Guevara challenged him to a competition on the first machines constructed:

We began the day's work at six in the morning assisted by some *compañeros* who had worked in the construction of the machines. The task finished at 6pm, with just 15 minutes' break after the first six hours ... I remember when we finished the work, almost at dusk, Che appeared jubilant, and with his short breaths [from asthma] he spoke about the advantages and disadvantages of the cutter and ended by saying that the battle to mechanise cane was being won.⁵⁸

'Che drove me crazy', said Menéndez, about Guevara's insistence on inaugurating the equipment for transporting *azúcar a granal*, built but abandoned due to workers' resistance.⁵⁹ In 1962, he instructed Menéndez to locate the Cuban engineer Roger López who before the nationalisation of the sugar industry had designed the equipment and now worked as a university professor of engineering. López had no sympathy for the Revolution and was preparing to join his family in the US – a move complicated by migration controls at both ends. However, when Menéndez asked, he agreed to stay in Cuba to conclude the project, 'because he wanted to see his work finished'.⁶⁰

López was provided with a car and a revolutionary engineer to shadow him, learning about the equipment and technical processes and ensuring he did not carry out sabotage. When the work was complete, Guevara facilitated the engineer's exit to join his family by Christmas. According to Menéndez: 'the engineer explained that if he had been treated in the way Che had treated him since the beginning, he would have stayed in Cuba, but that his family

was already over there'.⁶¹ Guevara said they were welcome to return. Just as Guevara believed that technology *per se* had no ideology; he also believed that technical skills could be exploited for the benefit of the Revolution regardless of the ideological affiliations of the technicians. As a result the *azúcar a granal* equipment, which private businesses had been unable to introduce before the Revolution due to workers' resistance, was inaugurated in Cuba, alleviating the backbreaking work of loading 300 lb sacks of sugar onto boats in the ports.

It was a similar story in relation to the *centro de acopio*. Mechanising the cutting and retrieving meant that mechanically cleaning the cane was necessary before it was processed. Duque de Estrada recalled that before 1959: 'an engineer in Camagüey had designed a plant to "dry clean" the cane with air to remove the earth and straw. Better if the cane was burnt, but it could also be used with green [unburnt] cane.'⁶² His design was abandoned after workers' opposition pre-1959. A Cuban engineer, Robert Henderson Kernel, who studied in the US and had been Superintendent-General of the Preston sugar mill in Holguín, assisted the Mechanisation Commission to complete the construction of the *centro de acopio*. Henderson inaugurated five *centros de acopio* in addition to working on a combine harvester, mounted on a bulldozer, which cut a whole furrow of cane in one go. This machine was built for a specific type of cane and was never generalised.⁶³ By 2005, Cuba had 680 *centros de acopio*, distributed throughout the country.⁶⁴

For Guevara, the Commission's importance was not just measured in concrete results, but in the Revolution's audacity in working towards complex goals. He told sugar workers:

objectively the cane cutting machines represent a triumph for the Revolution, showing its capacity to focus its forces in order to resolve problems, and the prediction that in the next few years we can have thousands of cane cutting machines, and what is more, that we will improve their design every year giving them better capacity and more effectiveness.⁶⁵

Although the mechanisation project continued after Guevara's departure from Cuba, no more than 1 per cent of the harvest was mechanically cut in 1970.⁶⁶ However, with Soviet assistance from that date onwards, and with the increasing use of Cuban components in new combines, by 1990 that figure had reached 71 per cent.⁶⁷ In 2005, Fidel Castro announced: 'today, there is no one left that cuts sugar cane by hand'.⁶⁸ Guevara's ambitious project was achieved in Cuba's most important productive sector. In addition, the gradual mechanisation of the sugar harvest raised the technical level of *macheteros* who had to develop mechanical skills to maintain the equipment.

Cuban Institute of Research into Sugar Cane Derivatives

[T]he day will arrive when the derivatives of sugar cane have as much importance for the national economy as sugar has today.

Che Guevara⁶⁹

Cuba should maintain the pre-1959 levels of sugar production, believed Guevara, whilst developing new manufacturing and chemical industries based on sugar as a raw material – creating vertical integration of primary and secondary sectors of the economy and increasing the value of sugar industry exports. To these ends he set up the Cuban Institute of Research into Sugar Cane Derivatives (Instituto Cubano de Investigaciones de los Derivativos de la Caña de Azúcar – ICIDCA) in 1963. It was headed by Miguel Urrutia, a chemical engineer who graduated in the US and was a nephew of the Republic's first president.⁷⁰

The principal byproducts were the syrup (molasses) from the cane juice, which was already used to make alcohol, principally rum, and *bagazo*, the cane after the juice has been squeezed out. It had long been used as fire fuel in the mills, but Guevara wanted to manufacture it to make cardboard and paper and synthetic fibres, including rayon and *fulfural* which has multiple uses in the medical industry, cosmetics and animal feed. This would create industrial zones around the mills in the countryside, bringing employment and development to those areas. MININD's own publications were produced from *bagazo*. Menéndez pointed to the lack of research carried out anywhere in the world on sugar byproducts. The technology required for such a comprehensive derivatives industry hardly existed, so it could not be imported. Success would largely depend on the ICIDCA's ability to develop its own technology. Given the lack of scientists and technicians and the absence of mechanical and chemical industries in Cuba, advances in this field would clearly be made very slowly and only with massive investment: 'The problem was the cost of the technology, which would prevent us competing in the market', explained Menéndez.⁷¹ An additional problem, according to Sáenz, was that Guevara's vision was not fully appreciated by his colleagues: 'Che said "Let's manufacture products with more value added than sugar, so that sugar is a sub-product and plastics, pharmaceutical drugs and so on are the main products." But I think we missed the point at that time, and now it is too late.'⁷²

The short-term expectations on the ICIDCA were not so ambitious. A report by Guevara in 1964 said: 'the future of the ICIDCA is in the growing emphasis on the processes of fermentation that would allow the institute to have advanced technology in this area'.⁷³ With the assistance of East German specialists, they developed research centre technology, including a pilot plant set up in a former US sugar mill, for extracting dextrane (used medically as

an antithrombotic and to reduce blood viscosity) from sugar cane. Sáenz confirmed that ‘the advance made in the ICIDCA in the first years was notable. Che was very satisfied with the results obtained and had a high opinion of the work carried out.’⁷⁴ In June 1964, the EC of Sugar split off from MININD to become the Ministry of Sugar (MINAZ), headed by Orlando Borrego. The ICIDCA passed over to MINAZ’s jurisdiction where it remains today. Luis Gálvez, whom Guevara once called ‘the administrator of the future’, has been its director for over 30 years.⁷⁵

MINERALS, METALS AND AGRICULTURE

Cuba has among the world’s largest known reserves of nickel. This fact featured strongly in Guevara’s vision of endogenous development – the creation of mechanics and electronics industries based on domestic raw materials. It meant expanding and improving the island’s metal extraction facilities. Guevara nurtured the nickel industry specifically, and metallurgy in general, working to create the technological and research infrastructures necessary to embark upon his ambitious plans. Here again, he aspired to adopt the best capitalist technology and to place Cuba in the forefront of this important economic field.

In 1959, there were two nickel mines in Cuba, both in Oriente province. Nícaro was owned by the US government and Moa by a private US company, the Freeport Sulphur Company. The metal was sent to the US for processing. In 1957, the Batista regime had granted a \$180 million tax concession for US investments in Moa and Nícaro. Guevara said the US embassy itself had drafted the concession, which provided employment for a few thousand Cubans.⁷⁶ Even after 1959, a report on the Cuban nickel industry compiled for US President John F. Kennedy highlighted its importance for the development of the US military industry, including their space exploration projects.⁷⁷

Nícaro was founded in 1943 during the Second World War and expanded for military purposes in 1952 during the Korean War. By 1958 the plant was valued at \$87 million and had reached annual production of 52 million lbs – about 11 per cent of the world’s supply outside the socialist countries.⁷⁸ The plant had its own electricity supply and employed 4,000 workers in continuous production. A magnesium plant at Nícaro, called Felton, had another 400 workers. The plant at Moa was more modern, employing 1,600 workers, also in continuous production. Moa was the last plant completed by US interests in Cuba. Valued at \$75 million, it was barely inaugurated in 1958 and abandoned the following year. Production stopped at Nícaro in 1960, after the US government refused to pay a new 25 per cent tax imposed on exports.

Restarting production at Moa and Nícaro were major achievements for the revolutionary government under Guevara's leadership of industry.

It must have seemed unlikely to the US government that the Cuban revolutionaries would be capable of operating the Nícaro mine after US technicians had left the island and US imports vital for production, particularly ammoniac, were cut off. 'The technological dependence of the nickel industry on the US was total', stated Borrego.⁷⁹ Paralysis would have been politically, as well as economically disastrous for the revolutionary government, leaving 6,000 Cubans, including skilled workers, unemployed. Their families and the towns built up around the mines depended on their income. With few engineers and technicians among its ranks, the Revolution relied on the support and collaboration of the mine workers themselves to re-establish production. One Cuban engineer, Demetrio Presilla, played an essential role at Nícaro.⁸⁰ In 1960, Benjino Lorenzo Regueira Ortega, who had previously taught at Havana Business School, became head of the Cuban Mineral Institute (ICM), set up under the National Institute of Agrarian Reform (INRA) and responsible for the nationalisation of the mines. Although this institute was not under his jurisdiction, Guevara advised Regueira to travel to Oriente to work with Presilla. Regueira had been on the trade mission to the socialist countries with Guevara in 1960, following which the USSR sent a team of specialists to assist the revolutionary government at Nícaro, motivated by their own interest in Cuban nickel exports. Regueira explained that Presilla, affected by years of anti-communist propaganda, initially refused to cooperate with the Soviets but finally he agreed to collaborate: 'not because of me, but because of his respect for Che', he said.⁸¹

The respect was mutual. Borrego recalled that when *compañeros* in Nícaro complained to Guevara about Presilla's high salary, his partiality to a stiff drink with the miners after work and his visits to the church in the local town, Guevara responded sardonically. Presilla deserved the high salary for his loyalty, high qualifications and dedication to work, he said: 'and if we didn't have enough money to pay the salary, we could print more banknotes to do so, given that the bank is in our hands since nationalisation'. Drinking after work, he said was 'a habit most Cubans have', and he defied those present to throw the first stone if they claimed to be exempt from this sin. Presilla's trips to church, however, were very worrying, said Guevara: 'Mayarí is a little far from Nícaro and if Presilla makes this journey driving his car after having a little rum, he could have a serious accident.' If Presilla didn't have a driver, they should seriously think about getting him one: 'to avoid the chance of losing such a valuable technician', Guevara concluded.⁸²

In January 1961, Guevara warned the workers at Nícaro to expect a US military or *émigré* invasion, urging them to respond to the imperialist threat

by increasing their output. He pointed out how the benefits bought to them by the literacy campaign would help to improve production. Borrego recalled: 'He finished by saying that it was much easier to die in a trench fighting the enemy than to work with maximum effort for 365 days of the year.'⁸³ From February 1961, responsibility for mining was transferred to the new EC of Nickel in MININD. Guevara immediately set up the Cuban Institute of Mineral Resources (Instituto Cubano de Recursos Minerales – ICRM) to carry out research in cooperation with the EC, thereby establishing a model for collaboration between research institutions and ECs of production. New mines were opened up, with map coordinates provided by the ICRM and a new railroad and other facilities built for it, with equipment bought in the USSR and England.

From 1963, the administrator at Nícaro was Gálvez, the young chemical engineering student who had previously turned around the EC of Cement.⁸⁴ Gálvez was sent there to deal with problems created by the desertion of key engineers who left for the US and because socialist bloc assistance was not very effective. He said: 'My main role was to get a good understanding of that complex technology, to establish good relations with the workers and take a lead in the technical side. I had the factory and the mine 20 kilometres away. I practically lived in the factory.'⁸⁵ Workers at these mines received special rations and higher salaries, in recognition of the danger and intensity of their work – occasionally involving consecutive shifts – and because their incomes had to provide for their families, given the lack of alternative employment in the region.

The ammoniac necessary for nickel extraction arrived in weekly shipments from the USSR, which also provided credit for the Cubans to buy spare parts from the west.⁸⁶ The credit was repaid in nickel. Gálvez recalled that Presilla was keen on initiating a new process of separating cobalt from nickel, which would increase export values as cobalt prices are higher than nickel prices. It was this enthusiasm and drive which made Presilla stand out. Gálvez said: 'He was passionate about his tasks. He arrived at Nícaro early every day to revise the results of the previous day and inform the morning Production Council. He went round with a metal helmet. If he arrived at the Council and threw the helmet on the table we all knew things were bad.'⁸⁷ Fidel Castro also consulted Presilla about possibilities for future production. According to Gálvez, they knew each other from Mayarí, a town near the mine where Castro grew up.

The Moa story surpasses that of Nícaro as a testimony to MININD's achievements in the metallurgy sector. Borrego described Guevara's campaign to restart production at Moa as a chess game. The Soviet engineers who arrived to assist at Moa were not familiar with its modern technology, so Guevara met with technicians and engineers working at the plant before the Revolution who

were now mostly re-employed in Havana. Emphasising the vital role of the mine in Cuban development and the importance of their own contribution, he asked them all to volunteer to go back to Moa – at least temporarily – to help restart the mine. When those refusing had dwindled to a minority, he told them they had no choice, they were obliged to return.

Back at Moa, with the help of Presilla and the Soviets and frequent visits from Guevara, they set to work. Following investigations, Guevara found out about an Indian engineer Dr T. K. Roy, who had worked on the complex plant design. He was contacted and agreed to secret arrangements to get him into Cuba where he stayed for one week to help rehabilitate production at Moa. Borrego said: ‘this meant the last move in the name of the Cuban Revolution in the long awaited “checkmate” Che had decided to give the yankee government in the technological terrain, showing that in this field also revolutionary daring could triumph with decisive and intelligent work when faced by a powerful adversary’.⁸⁸

Gálvez recorded that one of the new mines opened at Sol Libano contained limonitic nickel, a metal composed of iron, nickel, cobalt and silica. There was also serpentine. Moa had more limonitic nickel than serpentine, and at Nícaro it was the reverse. He explained that both Guevara and Castro aspired to progress beyond the production of nickel, which is an intermediary product, to produce stainless steels for use in the chemical and food industries. This was achieved in the 1980s in Las Tunas, but in Guevara’s time the principal achievement was to stabilise nickel production and export it to the socialist countries, mainly the USSR, to fund investments. By the late 1990s Cuba was the sixth-largest producer of nickel in the world and the fifth-biggest producer of cobalt as a nickel byproduct. Cuba also produced moderate amounts of ammonia, chromite, gypsum, petroleum and petroleum products, salt, silica sand, steel and sulphur as a byproduct of petroleum, and other construction materials.⁸⁹ There is a direct link between these productive achievements and the first decisive steps taken by Guevara post-1959.

Cuban Institute of Mineral Resources

We must search for mineral resources ... it is a task for everyone. We must prepare many geologists or mine engineers, *compañeros* who explore practically every square metre of the territory to investigate its potential ... and do the industrial preparation to get at those metals ... we are thinking of developing a lot along this path, which is why we have created the Cuban Institute of Mineral Resources, which is part of the Ministry of Industries.

Che Guevara⁹⁰

There were just two geologists in Cuba in 1961 when the ICRM was set up as the ministry’s first research centre.⁹¹ The institute relied mainly on Argentinian,

Soviet and Czechoslovakian geologists. Its objective was to begin investigations into searching and prospecting for mineral resources across the island – work previously carried out by foreign companies. This involved opening up paths to transport equipment and supplies to remote locations and constructing temporary accommodation on site.

Oil was first extracted in Cuba in 1881, but it was too early to bring significant economic benefits to the company responsible or for the island.⁹² There were small-scale discoveries in the following decades, then in 1954 industrial production began at a well in central Cuba. The consequent frantic search by foreign oil companies between 1954 and 1957 revealed small reserves in four locations. Following the Revolution, a new law enabled the government to collect technical information from the oil companies granted a concession under Batista's regime. In protest, those companies began to withdraw from the island. Consequently, the government set up the Cuban Petroleum Institute (Instituto Cubana de Petroleo – ICP) to take charge of the industry from exploration to distribution and derivatives. With assistance from Argentinian and Mexican specialists, the first new well was opened up in May 1960.

In 1961, following the nationalisations and the trade mission led by Guevara, the Soviets agreed to send specialists to assist in this area. The ICP became the ICRM. Conflicts arose because of ideological differences between the Argentinian director and the Soviet and Czechoslovakian scientists, holding back the work of the institute.⁹³ Consequently, Jesús Suárez Gayol, a captain in Guevara's Rebel Army column, became the new director. He instructed one of the two Cuban geologists to conduct research on the mineral and petroleum mines under production. In 1963, the annual report of the ICRM concluded: 'we have to give attention to petroleum, because the real possibility has emerged of finding it in some zones. We must continue the investigations to see if it is possible to reduce imports which consume \$80 million every year.'⁹⁴ Guevara instructed the institute produce a geological map of Cuba, 'with special practical consideration for the economic problems of the country, such as an increase of reserves and the prospecting of supplies of those minerals which substitute imports and would be a source of hard currency'.⁹⁵

In 1964, Sáenz travelled to Cayo Francés to visit a five-metre-deep oil well, the deepest drilled since 1959. He said: 'I realised the difficult conditions in which those drillers and the Soviet specialists worked in. I had never seen – or felt – such aggressive mosquitos!'⁹⁶ In that year, 21 oil wells had been finished and 34,343 tons of oil extracted.⁹⁷ The Institute had calculated Cuban reserves of iron, magnesium, copper, nickel, refractory chrome, metallurgical chrome, gold, quartzite, thick and silica sand for sand casting, bentonite, coral, limestone for carbide and salt gems. They had located the necessary primary

materials for making cement, for the refractory industries and for ceramics and glass production.⁹⁸

With Guevara's help, Suárez Gayol organised people's explorations to enthuse and integrate young Cubans in the search for minerals.⁹⁹ And in 1964, a book entitled *Geology in Cuba* was published as part of a project Guevara initiated for the education and training of new Cuban geologists. He wrote in the prologue:

initially the Institute [ICRM] was characterised by the absolute pre-eminence of the geology of petroleum ... Lately, it has managed to balance this and give the necessary importance to all its tasks, whether that is the direct search for oil or for metal and non-metallic minerals, scientific research of a higher level or the training of the cadre necessary so that the country can find its own feet in this field.¹⁰⁰

Lamenting the lack of Cuban geologists and the ICRM's dependence on socialist bloc assistance, Guevara nonetheless praised 'our capacity to learn from our contact with the most progressive scientists of the most advanced fraternal countries, as much in technology as in organisation'.¹⁰¹ By 1964, 153 foreign specialists worked in the ICRM.

In 1965 the ICRM was searching for rare mineral reserves and coppers to serve as the foundation for a future electronics industry in Cuba and working to prepare the organisational and technical material base for the drilling the sea around the Keys in the north coast of central Cuba. Juan Valdés Gravalosa, secretary to MININD Management Council, said Guevara was convinced that Cuba had significant oil reserves and he suspected they were in the Gulf of Mexico: 'I asked him, if you believe there's oil in the Gulf, why don't we go and investigate? He told me that we can't because the technology for this still doesn't exist.'¹⁰² Guevara's prediction was right, and by 2008, Cuba was producing around 60,000 barrels of oil daily – covering 50 per cent of its energy needs – and 20,000 barrels equivalent of natural gas from onshore wells along its northern coast. It had also begun deep-sea drilling to tap into Gulf reserves, estimated by the government to hold 20 billion barrels – which would convert Cuba into an oil exporter.¹⁰³

Cuban Institute of Mineral and Metallurgy Research

We have lots of iron ... we have nickel, we have cobalt, we have chrome, we have magnesium; there is a set of minerals that permit us to make alloys, to make special metals when we have developed our steel and iron industry, and furthermore, we have copper which is also a really important metal. That means that we have to develop ourselves a lot, to develop with audacity, to go on creating our own technology ... here there are no metallurgists, but there can and should be, and this should be one of the great lines of work of revolutionary industry.

Cuba is abundant in *lateritas* – reddish ground in humid tropical regions, rich in minerals, iron, nickel, cobalt and albuminate (an alkali compound of albumin). In 1962, Guevara set up the Cuban Institute of Mineral and Metallurgy Research (Instituto Cubano de Investigaciones de Minería y Metalurgia – ICIMM) to complement the work of the ICRM. It was dedicated ‘to the tasks of developing and applying new technologies’ in the mineral and metallurgy branches, focusing on *lateritas* whilst simultaneously searching for other complimentary non-metallic natural resources, such as magnesium and dolomite, and increasing the extraction of copper for future utilisation in the electronics industry, among others.¹⁰⁵ Guevara wanted to increase the exportable base of the country and move towards specialisation in the international division of labour within the socialist bloc. In addition, ICIMM was to develop technology and investments to expand Antillana de Acero, a steel plant in Havana, to assist a metals plant in Pinar del Río and to instruct the ministry ECs on the development of the iron and steel industry in the west of Cuba.¹⁰⁶ The ICIMM piloted a rotating oven to produce sponge-iron in the institute. Beyond that however, little was achieved, for which Sáenz largely blamed the managerial deficiencies of the Institute’s director, Faustino Prado, who, because of his advanced technical level, enjoyed Guevara’s full support, despite his lack of ideological affiliation to the Revolution. Finally, Prado was transferred to another position but he left the country soon after. Sáenz conceded that ‘independent of the deficiencies of Prado, it was impossible to achieve technological results of this magnitude within only two or three years of work’.¹⁰⁷ Gálvez said that while good results were achieved in separating cobalt from nickel in the pilot plants, industrial application would have taken massive investments which were simply not available. The Soviets were interested in importing Cuba’s nickel, but not in manufacturing cobalt, so they lacked an incentive to invest in the technology.¹⁰⁸

When Guevara left Cuba, the ICIMM was closed down, its functions returned to the pilot plant at Nícaro and the rotating oven transferred for use in a cement factory. Today, the Centre for Investigations into the Mineral and Metallurgy Industry (Centro de Investigaciones para la Industria Minería y Metalúrgica) carries out this work in Cuba and once again the development of metallurgy that Guevara promoted is receiving investment.

Cuban Institute for the Development of the Chemical Industry

The ICDIQ was created to develop the chemical industry and also to benefit from the work capacity of compañero Álvaro García Piñera and his enthusiasm for chemistry ... For now this institute should just work to create technology and build factories to match that technology, that is to say, developing the apparatus and equipment necessary. It has to act as the investor organisation in relation to new plants.

‘Informe del ICDIQ’¹⁰⁹

The chemical industry was one of the lines of development which Guevara identified as playing an increasingly important role in international development. The Cuban Institute for the Development of the Chemical Industry (Instituto Cubano para el Desarrollo de la Industria Química – ICDIQ) was established in 1963 to address the lack of material and intellectual resources, to foster this sector, based on the island's natural resources, and to collaborate with MININD's Light and Heavy Chemical branches, which incorporated twelve ECs, particularly the EC of Pharmaceuticals.¹¹⁰ The institute was given resources to build its own prototypes, pilot plants, and equipment. It was instructed 'to consider the satellite plants necessary for the supply of primary materials', and to develop technology for the extraction of steroids and carotene from the wax of *cachaza*, the outer film of sugar cane.¹¹¹ Later was added the task 'to develop the industrial application of antibiotics, not only for human use, but also for animals'.¹¹²

Guevara described the ICDIQ as having the stamp of its director Álvaro García Piñera, a chemical engineer who had worked on soaps and perfumes for Colgate-Palmolive pre-1959. Like Prado at the ICIMM, García Piñera lacked ideological affiliation to the Revolution and boasted the fact. Sáenz complained that García Piñera was leading the institute badly and had taken Guevara's endorsement as *carte blanche* to carry out projects which were unrealistic and irresponsible: 'He dared to do things irrationally, he broke the laws of engineering. With a pencil and slide rule, he designed an antibiotics plant. That's crazy!'¹¹³ Guevara dismissed Sáenz's criticisms, suggesting that he was jealous. Whilst recognising deficiencies in García Piñera's work and organisational abilities, he was drawn by the engineer's proactive attitude and enthusiasm for an industry which was central to modern development, yet all but absent in revolutionary Cuba. Ultimately, Sáenz's assessment proved correct. The antibiotics plant, which García Piñera had adapted from a yeast factory, failed to produce a single antibiotic and was returned to yeast production. Likewise the other projects, said Sáenz: 'The truth is that all the chemical plants that García Piñera had announced and included in the ministry plans also resulted in failure. The technical approach to the projects was very superficial and disorganised.'¹¹⁴

Vice Minister of Industrial Construction, Ángel Gómez Trueba, reflected more positively on achievements in the chemical industry, although he was perhaps referring to the productive ECs more than to the work of the ICDIQ. Both Trueba and Sáenz mentioned the construction of a fertiliser plant in Matanzas which was brought into production with assistance from the GDR. Another fertiliser plant bought from the British firm Simon Carver was a disaster, said Sáenz, as part of the equipment collapsed after the Cubans had paid for it.¹¹⁵

Trueba listed plants installed for the production of calcium carbide, and a contract with the French chemical industry for assistance in the fields of fermentation and sodium hydroxide production that was later cancelled. Trueba also concluded negatively: 'the lack of understanding and internalisation at that this time about this sector had an adverse effect on socialist economic development'.¹¹⁶ Sáenz speculated that even with a superior director at the ICDIQ they were unlikely to have achieved better results. Effectively they were starting from scratch, with few scientists, little equipment and scarce capital. Nonetheless, a valuable idea and a research methodology were established, he said: 'The idea was excellent, to make an institute with what they call a complete cycle of innovation. The institute develops products at a scale where it can build pilot plants which, if successful, are turned into production plants.'¹¹⁷

Guevara may have been swayed by the unrealistic pronouncements of García Piñera, who, like Prado, left Cuba for the US after Guevara's departure. However, the methodology of constructing laboratories, prototypes and pilot plants was valid and valuable, and the innovation cycle is applied successfully today throughout Cuba's science and technology institutes.

Cuban Institute for Technological Research

The main task of the ICIT is in agriculture, to facilitate our industrial development and for the maintenance of botanical science ... with scientific controls from the planting of the seed up to industrial exploitation.

'Informe del viceministro para el desarrollo técnico'¹¹⁸

The Cuban Institute for Technological Research (Instituto Cubano de Investigaciones Tecnológicas – ICIT) was founded in 1962 to facilitate the industrial application of agricultural products and other flora. Its focus was on import substitution, especially of goods purchased with hard currency and the creation of new products with strong markets.¹¹⁹ Guevara endeavoured to create stronger links between agriculture and industry, introducing industrial management methods to agriculture in a way which, Sáenz claimed, 'anticipated the idea of the future complex agro-industry'.¹²⁰

Directed first by Miguel Urrutia and then by Omelio Sanchez, a founding member of the Department of Industrialisation, the ICIT took over a farm in Havana, abandoned by a rich politician from the previous regime. They constructed laboratories, pilot plants and workshops from scratch. By 1964, a laboratory had been installed for research into the textile branch and a machine was invented to wash fibre produced from the kenaf plant (similar to hemp).¹²¹

The ICIT carried out research on guar (a legume), saffron, ramie (nettle family), fig trees, soya, kenaf, yucca starch, hybrid corn, wheat, barley beer, coco, coffee and peanuts. The industrial potential of this flora ranged from fabric dyes, to fibres, sewing thread, fishing ropes, food colouring, animal feed, vegetable oils, perfumes, and so on. Successful laboratory research was carried out for extracting tannin from Eucalyptus trees and other plants for tanning and with inorganic pigments, using Cuban chromite as a primary material. The 1964 annual report recorded that the ICIT ‘had carried out work on the use of Cuban raw materials for the ceramics industry. They have had various experiences concerning the application of our clay and kaolin (clay mineral) – an interesting project linked to the manufacture of chemical earthenware.’¹²² The ICIT was also responsible for ‘studying the application of experimental cultivation being carried out in our experimental unit [Ciro Redondo], controlling and improving its internal systems’.¹²³

Ciro Redondo

Che’s visits to the farm ‘Ciro Redondo’ were very frequent ... he instigated experiments with the new salary system based on conceptions which were part of the Budgetary Finance System ... *Ciro Redondo* developed a group of medicinal plants for the production of medicines, convinced of the future importance of ‘green’ medicine.

Orlando Borrego Díaz¹²⁴

In 1961, Guevara gave instructions for an abandoned farm to be located for MININD to carry out socio-productive and botanical experimentation. It was named *Ciro Redondo* in honour of a captain from his Rebel Army column who died during the revolutionary war. In January 1962, 165 students selected from the Rebel Army school were sent to the farm. Most had been troops in Guevara’s Rebel Army columns and had low educational levels. Guillermo Cid Rodríguez located a farm in Matanzas and then stayed to lead the scientific-technical work. A humanities graduate in France in 1922, Cid had dedicated his life first to journalism and then to economic botany. He was recognised as Cuba’s pioneer in the exploitation of kenaf, the study of forage and the development of horticulture for export purposes.¹²⁵ Guevara described him as ‘a scientist with calloused hands’, in praise of his intelligence and hard work.¹²⁶

The farm Cid chose had good soil but was in bad condition, and on rocky ground, so the experiment did not interfere with INRA’s cultivation plans. The soldiers’ challenge was to get 200 hectares of the farm producing within one year with little mechanical equipment and, in addition, to combine the work with evening study.¹²⁷ A mathematical physicist, Dr Raúl Arteché Duque, directed the school at the farm.

Ramiro Lastre, a former Rebel Army soldier at *Ciro Redondo*, recalled 23 varieties of medicinal plants being cultivated there, including foreign species. They were used in experiments, he said: 'At one stage we had Chinese scientists, a doctor of science and three agronomy engineers, who lived on the unit with us.'¹²⁸ The Chinese were specialists in vegetable fibres. The main experimentation on the farm was with textile fibres – from kenaf and ramie – and with oleaginous (oily) plants, such as peanuts and sesame, and with tung trees and safflower for making paints. They also worked with two renowned Cuban scientists, Juan Tomás Roig and Julián Acuña Galé, who ran the Agronomy Experimentation Station in Havana, which was originally set up in 1904 mainly to experiment with different species of sugar cane. In a book on medicinal plants which Guevara gave to Tomás Roig, he wrote: 'I beg you to consider this a small homage from this ministry to the scientist who raised the high name of Cuba before the Revolution began to do so universally, on a daily basis.'¹²⁹

Cid headed two missions to Brazil to visit agro-industrial experimental centres there and establish a programme for cooperation. The Cubans returned with samples, but the project was frustrated by the military coup in Brazil 1964. Medicinal plants from *Ciro Redondo* were taken to the Hospital of Oncology in Havana where Cid's wife, Cora Lazo Jesús, who held a doctorate in pharmaceuticals, and three other scientists, carried out laboratory experiments. She recalled: 'we began to work with varieties of these plants. I worked as a chemist. The fourth floor of the building was practically part of the Ministry of Industries'¹³⁰

Juan Valdés Gravalosa, secretary of MININD's Management Council, went to inspect the Hospital of Oncology. He recalled 40 scientists working on the top floor under Guevara's directives carrying out laboratory experiments on plants, animals, raw materials, and so on. Guevara met with them to discuss ideas and agree which would qualify for further investigation. As well as research into using the vicaría flower to fight leukaemia and into antibiotics, Valdés Gravalosa recalled an experiment called '31' which involved taking a flower with potentially strong medicinal qualities from burial earth: 'They were secretly going round the cemeteries!'¹³¹ Guevara, who had personal experience of medical research in South America, was collaborating in diverse and innovative projects with medicinal, homeopathic and industrial potential.

In addition to botanical and technological experimentation, *Ciro Redondo* was used as a social experiment for the organisation of work, management techniques, incentives structures and salary scales – aspects of the BFS. The salary scale implemented at the farm applied the system of norms used in the agricultural sector adjusted for activity linked to research and development. Exceeding the norm resulted in overpayment, including payment in kind. However, the bonus went to a collective fund distributed to workers according

to their level of qualification, completion of the work plan, attendance, punctuality and the quality and yield of the harvest.

The first type of award distributed from the collective fund was housing, built collectively on the farm itself, the next was furniture, radios, horses, and so on. Those who were not punctual could not receive awards. Additionally, the communal fund was used to finance social works or communal activities, for example, cinemas showings and kids groups. Sáenz explained: 'This form of payment was designed to relate the worker to his productivity, to interest him in raising his qualifications and develop his collective spirit. In this way, his individual compensation was a measure of his contribution and overall personal effort, including in his studies.'¹³² This experiment took place while Guevara worked with the Ministry of Labour to formulate a new national salary scale. It provided concrete experiences as to how incentives could be devised to link training and productivity to a collective attitude – work as a social duty. Minister of Labour Augusto Martínez Sánchez visited *Ciro Redondo* with Guevara, flying into the airstrip which the workers constructed to facilitate his frequent visits. In addition, they built accommodation, a dining room, warehouses, buildings for the pilot plants, a school and 21 houses distributed according to the award system. Sáenz also toured in the farm with Guevara on horseback – struggling to stay on his horse to the minister's great amusement – observing the cultivation and experiments. This was followed by group discussions with the workers about their projects, the administrative system and the study circles. MININD's director of psychology, Dr Graciela de Cueto, went periodically to the farm to assess those with learning difficulties and other problems.

In 1965, *Ciro Redondo* was transferred to the National Centre for Scientific Research (CENIC). Many of the young soldier-farmers moved on to leading roles in the Union of Young Communists and the Cuban Communist Party or in agricultural enterprises and sugar mills. Various structures experimented with in *Ciro Redondo* were embedded into Cuban institutions – the salary scale, the system of collective material incentives, or payment in kind, and the increasing integration of agriculture and technology, botanical experimentation and the use of 'green' medicine.

Cuban Institute for Machinery Development

The Cuban Institute for Machinery Development will concentrate its action in the development of spare parts and agricultural machinery, coordinating the latter with INRA.

'Orientaciones para 1964'¹³³

Guevara lamented that the Revolution's early trade deals had excluded the purchase of a spare parts factory.¹³⁴ In 1963, he set up the Cuban Institute for

Machinery Development (Instituto Cubano para el Desarrollo de Maquinaria – ICDM) to systemise the search for domestic solutions to the problems created by a lack of capital goods and spare parts with the imposition of the US blockade and the shift in trade.¹³⁵ With the help of Soviet advisors, the ICDM worked to install spare parts factories and to optimise the use of machines and tools already available in MININD. With the advisors distributed throughout the ECs, the ICDM coordinated the spare parts plan for the ministry and collaborated with the Light Mechanics branch (ten ECs) to create a metallurgy laboratory to tackle problems in that branch.¹³⁶ Sáenz explained the aims of the ICDM:

They tried to organise the production of spare parts – to generate ideas, to train people, with the aim of producing our own spare parts. Cuba didn't have a mechanical industry, only small workshops. They also tried to develop some machines. They gave a national impulse to the sugar harvest ... This institute was the cornerstone for future developments. For the first time we had an institute for machine construction.¹³⁷

There was a marked increase in the production of spare parts from 4,500 tons (4,770 parts) in 1963, to 5,940 (8,200 parts) in 1964, an increase of 132 per cent – with a planned increase to 9,800 tons in 1965 following the inauguration of a mechanics plant in Santa Clara.¹³⁸ Another metallurgy plant was also under construction for the manufacture of spare parts and to experiment with production of parts for diesel motors.

The ICDM constructed agricultural machinery for sugar cane and kenaf – work led by Henderson, the engineer involved in the Commission for the Mechanisation of the Sugar Harvest. By 1964, they had built a combine harvester for the sugar cane. An improved prototype was tested in 1965 – which cut cleaner and prevented cane being left in the field. A kenaf cutter was built and used in 1963, then updated the following year to be more productive and adapt to different plant sizes. In 1964, another machine which stripped the bark from the kenaf plant was also improved to reduce the number of operators from seven to four (a 42.8 per cent reduction). Clearly, there was significant progress in the principal tasks of the ICDM. While the institutes work was satisfactory, its principal weakness was its continuing dependence on foreign technicians.¹³⁹

NAVAL CONSTRUCTION, AUTOMATION AND ELECTRONICS

MININD's research and development institutes related to two of the four lines of development proposed by Guevara in 1962 – metallurgy and sugar cane

derivatives. Efforts to foster progress in the remaining two sectors – electronics and naval construction – were integrated into the main ministerial apparatus, not in research and development institutes, via the EC of Naval Construction, the Office for Automation and Electronics, the EC of Electrical Equipment and the EC of Electricity.

Naval construction

The naval industry offers prospects of enormous importance to Cuba, but it is not just one industrial branch. Rather it is made up of a complex of factories: metallurgy, motors of various types, cables, electrical equipment and electronics, carpentry, etcetera.

Che Guevara¹⁴⁰

As early as January 1959, Guevara spoke publicly about the need for a merchant fleet as a corollary to Cuba's export industry.¹⁴¹ Naval construction, he said, could be developed at a faster or slower pace, but either way it must be considered as an important aspect of Cuban industry, given the country's conditions – an island highly dependant on international trade.¹⁴² Because of its complexity, progress in this sector would serve as a kind of litmus test to measure development in other industries – metallurgy, electronics and mechanics. Building domestic merchant ships would save Cuba millions of pesos on transport costs every year – now that 80 per cent of trade had shifted from the US (150 kilometres away) to the USSR (8,000 kilometres away) and to the rest of the socialist bloc:

Cuba will need to transport more than eight million tons [of sugar] in 1965, when this [naval] industry begins ... at least 80 ships will be needed just for Cuba. We have to consider other important areas of naval construction such as the ships for the coastal trade, which is the cheapest form of internal transport, and the construction of an adequate fishing fleet.¹⁴³

With an expanded fishing fleet, Cuba could increasingly substitute costly food imports with local fish and sea foods, to the benefit of the underdeveloped coastal regions. Pre-empting objections to the huge investments required, Guevara asserted that, 'in terms of hard currency, a ship would recoup a value of 2.5 million pesos in five trips to Europe, with the average value of 500,000 pesos per round trip, which constitutes a succulent saving for a country such as ours, maritime exporter par excellence'.¹⁴⁴

According to Trueba, there had been a call for investments in the naval construction industry in 1950s Cuba, but 'it could not get the internal consensus necessary for its development'. Post-1959 there were plans to carry out the expansion of shipyards in La Habana with Cuban architects and civil engineers,

but investments were postponed. Trueba concluded: 'Nonetheless, this was a good experience for the projectionists, who counted on good technical assistance from Polish specialists.'¹⁴⁵

In 1962, the EC of Naval Construction was set up in the Metallurgy Branch of the Vice Ministry of Basic Industry. The EC achieved little in concrete terms and its management was assessed negatively in June 1964.¹⁴⁶ That year it was the EC which fell second-shortest from planned production at 61 per cent (a 9 per cent fall in production on the previous year), a shortfall valued at over 9,000,000 pesos, accounting for 25 per cent of the total shortfall of the Vice Ministry of Basic Industry.¹⁴⁷ This was blamed on many causes from delays in receiving imported supplies to design modifications which increased the costs of production.

Cuba never managed to build major transport ships, but the EC of Naval Construction made progress with wooden fishing boats called Lambda (69 operating by 1965) and Ro (14 in 1965). These made up the Gulf Fleet and caught some 4,232 tons of fish in 1965 alone. The incorporation of these boats was partly responsible for an increase in total fish production from 30,000 tons to 40,000 tons from 1960–65.¹⁴⁸ Later developments in naval construction included iron and cement boats. Furthermore, Cubans were trained in naval engineering in the socialist bloc, learning how to sail and maintain the merchant ships acquired by Cuba from elsewhere over the years.¹⁴⁹

Office of Automation and Electronics

Automation and electronics were a passion for Che as Minister of Industries.

Ángel Gómez Trueba¹⁵⁰

Just under half of Cuba's population was rural in the mid 1950s and only 9 per cent of rural dwellings had electric lighting, compared to 87 per cent of urban homes.¹⁵¹ The task of extending electricity supply throughout the island was a huge challenge facing the Revolution from 1959. It was a political imperative, necessary to reduce socioeconomic differences, especially between urban and rural Cuba in both personal consumption and by setting up new industries to provide employment. Guevara explained:

Electricity is one of the services that contributes more than any other towards the elimination of those differences, and electrification of the countryside is one of the tasks that the agricultural economy of Cuba faces in the future ... without electricity it's impossible to locate new industrial centres and often the preferred location, from other standpoints, has been jeopardised because electrical provision was insufficient for installing factories.¹⁵²

Cuba imported energy generation plants from the Soviet Union, Czechoslovakia, East Germany and France. Trueba said: 'The importance that this had for the economic development of the country and for the survival of the Revolution is difficult to overestimate.'¹⁵³ However, purchasing the plants from the Soviet bloc incurred enormous additional problems, as Sáenz explained: 'the eastern European socialist countries worked with 50 hertz, and Cuba worked with 60 hertz. Their technicians had to adapt the equipment before it was sent to us, because we couldn't change the whole electrical system. Those were big problems but the biggest problem was the lack of technical people.'¹⁵⁴

Guevara made reference to Lenin's definition of communism as Soviet power plus the electrification of the country. Electricity itself, he added, was not so definitive today, as more advanced technologies had been developed, but it remained vital.¹⁵⁵ The development of the productive forces under socialism would be measured largely by the extent to which the economy had introduced electronics and automation to production and administration. Guevara said:

The world is heading towards the era of electronics ... Everything indicates that this science will constitute some kind of measure of development; the country that masters it will be in the vanguard. We are going to turn our efforts to this with revolutionary audacity and incorporate ourselves into the group of countries that adapt themselves quickest to the technological upheavals that are occurring.¹⁵⁶

Automation – the highest stage of technological development – could even accelerate transition to the new society, Guevara said: 'automation is precisely the stage that marks the possibility of taking a leap, or we could say, arriving at the historical social stage to which we aspire, which is socialism. Without automation, that is, without substantially raising productivity, we will take much longer to reach that stage.'¹⁵⁷

Technological progress imposes the centralisation of the productive forces, Guevara said, citing as an example US electricity generators which produce 1 million kilowatts each – more power than the total installed capacity in Cuba – with just a handful of operators.¹⁵⁸ Guevara explained the significance of this phenomenon for the transition to socialism and communism: 'In all the great modern, centralised and automated industries, man's activity should take place outside of production. In the future man will express his wishes through political institutions which are being created, and which will determine the types of production which the country needs.'¹⁵⁹ Automation would permit political control over the economy.

Given Cuba's underdevelopment, Guevara's references to electronics, computing and automation must have appeared as a pipe dream. Guevara

himself warned against idealism in setting goals in this field. It was important to maintain a sense of perspective in relation to this line of development:

We also have to struggle a little against the idea that automation, that is, the era of electronics, is tomorrow, or within our hands. It is an aspiration; an aspiration which is a precondition for the development of a new society. But for this there has to be preparation ... and this will not be achieved in one day, not even in the course of a plan.¹⁶⁰

In 1962, the Office of Automation and Electronics was established within MININD to find immediate solutions to concrete production problems whilst laying the foundations for future advances. The Office was responsible for directing the projects underway in the EC of Electrical Equipment and for studying, repairing and carrying out maintenance of all the means of industrial control in the country. It was also directed to study the feasibility of installing an electronic components factory and of introducing automation in the sugar industry, with pneumatic and hydraulic controls. Additionally, it oversaw the training of electrical engineers and other technical cadre to operate imported equipment and to build up research experience in the fields of electronics, cybernetics, instrumentation and computing. These cadre would begin to study the possibilities for automation in the industrial sectors.¹⁶¹ Ultimately, it had few tangible results during Guevara's leadership of MININD.

Ambitious projects were underway by 1964 – a project related to the automation of MINAZ's Maritime Terminal in Matanzas for sugar exports, the installation of a system to control *tachos* (the centrifuge which separates sugar crystals from molasses) and evaporators. But the annual report concluded negatively that the Office suffered from 'a lack of definition of objectives, a lack of technical cadre and internal organisational deficiencies'.¹⁶² Trueba recalled negotiations with Poland for the construction of a plant to assemble televisions in Cuba which 'gave few results'.¹⁶³ The tasks set for the Office were changed often and substantially. It is not clear, however, whether a lack of clarity of their purpose explains this inconsistency, or vice versa.

The Office was also responsible for directing the School of Automation, set up with a group of Czechoslovakian engineers who taught middle- and higher-level technicians about automated control systems.¹⁶⁴ Effectively, it was a theoretical school, lacking the technology for the applied aspect. In December 1964, 69 students on the instrumentation course graduated as mechanics of measurement and control. A further 39 students were studying instrumentation techniques and 28 were students of automation.¹⁶⁵

In 1964 the Office was instructed to lead on Guevara's plan to import computer components and assemble the machines in Cuba. This would reduce

the cost of technology transfers and serve to train up electrical engineers until they were capable of manufacturing computers domestically. According to Oscar Fernández Mel, a doctor in the Rebel Army, Guevara was already thinking along these lines in early 1959 when they lived together in La Cabaña fortress: 'Che was interested in computing, the automation of management, of the economy and the factories', he affirmed. Clearly there were some successes, as Fernández Mel recalled: 'one of Che's happiest moments was when the EC of Perfumes had managed to automate their supply. He created the first school of computing and acquired the first computers ... Che was the pioneer of the introduction of computing in Cuba.'¹⁶⁶

To be truly endogenous, the electronics industry would have to develop as a corollary of the metallurgy industry based on the extraction and exploitation of the island's metal reserves. Given the underdevelopment of those other sectors, it is clear that a computer manufacturing sector based on domestic manufacture was a long way off – and remains so today. However, in April 1969, a group of Cuban researchers began to build a computer. A member of that team, Tomás López Jiménez, explained that within one year they had created a third-generation mini-computer called CID-201: 'of our own design, as we didn't have access to information or technology because of the blockade and lack of resources'.¹⁶⁷ This was just six years after the launch of the first ever mini-computer, the PDP-8, made by the Digital Equipment Corporation in the US.

In November 1969, at the height of the campaign for a 10 million-ton sugar harvest, Fidel Castro announced: 'we are now analysing, even trying to produce, the first computer that would daily, in every sugar mill, signal the optimal itinerary for the trains [carrying cane to the sugar mills]'.¹⁶⁸ Eighteen months later, CID-201 minicomputers had been installed in two Cuban sugar mills. According to López, 'The basic software and the application of those computers were indigenous to Cuba'. He added: 'it was a real shame that a few years later this line was neglected and many years were lost, although ... [later] we began to recover this perspective which, today, is a reality'.¹⁶⁹

Cuba has come a long way since that first greyhound betting machine. Computers are abundant on the island and fully integrated into the education system with a computer in every classroom and in Youth Computing Clubs open throughout the island. In 2002, the University of Computer Science was established, and by 2007 the first 1,500 students graduated, while another 10,000 were enrolled, carrying out practical work on productive projects and free software to contribute to the Cuban economy. There are four Cuban computer networks with international internet connectivity. As Guevara intended, electronics and computing have been applied to production and to science and technology research.

CONCLUSION

We are inaugurating an epoch in which scientific knowledge is, and will increasingly be, the main force that determines our rhythm of development and our capacity to 'burn through stages' in the construction of socialism.

Che Guevara¹⁷⁰

Guevara's promotion of science and technology within MININD was part of his theoretical understanding that communism should arise out of the highest stage of development of the productive forces. The greater the level of automation and centralisation, the greater the potential for conscious and political control of the economy, as market forces are replaced by planning in determining production and consumption. More concretely, however, the research and development institutes set up in MININD worked towards immediate goals – to find substitutes for costly imports, increase the value added to raw material exports, particularly sugar and nickel, create a mechanical industry to exploit Cuba's metallurgy reserves, produce spare parts and lay the foundations for the production of capital goods. Parallel to these projects was the imperative of reducing inequality by extending electrical provision and, hence, employment opportunities, to mechanise agricultural production, raise productivity and create a training infrastructure for future developments.

The development strategies pursued by the research and development centres set up within MININD illustrate Guevara's insight into technologically and economically important international developments. They were also based on Cuba's concrete conditions – rich mineral and metal deposits, the predominance of the sugar industry in an agricultural economy and recent international advances in the chemical industry, computing and automation. Aspirations to develop domestic naval construction were premised on the development of many other industries, but motivated by Cuba's foreign trade dependency. Reality imposed many obstacles – the lack of specialists and training facilities; deficient financial and material resources for investment; insufficient vision within government and limited appreciation of the aims of the institutes; isolation from the advanced capitalist world which impeded technology transfers; and the relative backwardness of capital goods from the socialist bloc. Multiple barriers to entry hindered the progress of these institutes and their economic impact – particularly in the chemical industry, sugar cane derivatives, naval construction, electronics and automation. Nonetheless, there were tangible results, particularly in metallurgy, machinery construction and the mechanisation of the sugar industry.

Borrego explained that when Guevara left Cuba the research and development institutes within MININD were neglected: 'This lasted about two years. It was a mistake on our part, but luckily we realised that quickly and refocused on

them.¹⁷¹ Today, institutes operate in Cuba covering all the areas of those set up by Guevara between 1961 and 1963. It is arguable that although the achievements were limited during MININD's existence, Guevara's real accomplishment was to introduce a methodology for applying science and technology to production, forcing that agenda onto the national development strategy, initiating the necessary training and research infrastructure, including investing in laboratory research, experimental areas, pilot plants and prototype workshops to create a cycle of innovation.

Ruiz testified that Guevara's vision was gradually embedded. He had worked with Guevara on attempts to apply computer processing to optimise production, including the critical path method for managing projects with sequential and parallel tasks. Following the division of MININD, Ruiz became vice minister in the Ministry of Minerals and Metallurgy where he applied these methods first tentatively experimented with in MININD. He pointed to the substantial economic benefits: 'For example, through my investigation into the mining process at Moa we saved millions of dollars with an operational analysis I was doing on that old computer' (the Elliot 803, which Guevara had imported).¹⁷² Ruiz was clear that although substantial results were not attained in MININD, later achievements were the direct legacy of a methodology which MININD promoted. In some fields, post-1965 science and technology advances can be directly linked to Guevara's leadership and the research and development institutions he established. In other cases the connection is more tentative. Arguably, however, Guevara's legacy is witnessed today in the substantial advances in Cuba's biotechnology industry and the ecology sector, which have a link, albeit a tenuous one, to his experimentation in the ICIT, Ciro Redondo and the ICDIQ.

8

Consciousness and Psychology

A Cuban worker goes to see the Secretary of the Party to say that he wants to become a member.

‘Well, to be a party militant you have to be an example at work. That means working 12, 18 or 20 hours a day.’

‘So many hours a day?’, asks the worker, alarmed.

‘Yes, and that includes Saturdays and Sundays’, informs the secretary.

‘As well!?’

‘Yes, and no vacations’, adds the secretary.

‘Neither!?’

‘Neither. What’s more you have to be faithful in your married life, no going around with women.’

‘Not one exception?’

‘None. Also, you have to stop having a little drink after work.’

‘Not even a little drink to celebrate something?’ begs the worker, going crazy.

‘No. And the most important thing: you have to be prepared to give your life for the country.’

‘Now that is no problem.’

‘Why not?’ asks the secretary curiously.

‘Well, after the lousy life I am going to lead ...!’

Tirso Sáenz¹

This joke, which Guevara told whenever he had the chance, shows not just his ironic sense of humour, but also a deep recognition that the paradigm of the socialist ‘new man’ he advocated was a profound challenge to the culture and nurture of Cuban workers.² Cuban socialism had not, in Marx’s words, ‘developed on its own foundations’, but emerged from capitalist society, ‘thus in every respect, economically, morally and intellectually, still stamped with the birth marks of the old society from whose womb it emerges’.³

Guerrilla warfare, by its nature, is voluntary and unpaid. However, Guevara demanded more than just combat from his troops during the revolutionary war – they built workshops, schools, medical centres and farms, thus introducing the concept of work as a social duty. In November 1959, as head of the

Department of Industrialisation and President of the National Bank in Cuba's new revolutionary government, Guevara returned to the Sierra Maestra with his *compañeros* to help build a school in the remote Caney de la Mercedes. In 1960, they participated in the sugar cane harvest and in constructing a nursery in Las Yaguas, a slum area of Havana where members of his Department also carried out the literacy campaign. However, it was to be another two years before voluntary labour was incorporated into industrial production and embedded into the entire apparatus of the Ministry of Industries (MININD).

At a national level, voluntary mass participation was organised through people's militias, set up in October 1959, the Committees for the Defence of the Revolution, established in September 1960 and the literacy campaign in 1961. Medical graduates dedicated two to three years to work in rural Cuba and scholarship students dedicated vacations to agricultural work. Guevara celebrated these developments:

This form of education best suits a youth that is being educated for communism: the form of education in which work loses the category of obsession that it has in the capitalist world and becomes a pleasant social duty, carried out with joy, carried out with revolutionary songs, amid the most fraternal camaraderie, by means of mutually invigorating and uplifting human contact.⁴

By 1961, there had been a net migration from the countryside to the cities, resulting in an unprecedented shortage of agricultural labour. The Revolution, however, had set its course on a development strategy based on accumulation in the agricultural sector. Commentator Bertram Silverman explained that 'Reversing rural-urban migration through a program of resettlement made little sense because economic plans called for a technological revolution in agriculture that would shortly reduce agricultural labor requirements.'⁵ The solution lay in voluntary labour to provide a temporary labour force for agriculture on a seasonal basis, but voluntary labour depended upon consciousness.

The Spanish word *conciencia* is translated into English as both 'conscience' (morality) and 'consciousness' (awareness). The word 'consciousness' is used here – reflecting the idea of socialism as an historical stage in which human beings plan production and distribution of the social product in a reasoned and deliberate way. It should also be understood in the sense of a social conscience transcending individual interest. For Guevara, consciousness meant a principled commitment to the social and economic justice aims of the Revolution – to socialism. For him, international solidarity was the highest expression of consciousness because it means giving apparently disinterested assistance to people, on the basis of shared humanity. Psychology was a tool

to measure the state of consciousness at the level of the individual and assess how changes in society were reflected within the mind and in value systems.

Given that names and labels reflect social relations, Guevara insisted on changing the titles of various functions to disassociate them from capitalist concepts. So while his Budgetary Finance System (BFS) borrowed organisational and technical methods from advanced capitalist corporations, it adopted titles appropriate to the notion of socialist Cuba as one big factory. Fidel Castro noted that 'Che was opposed to using capitalist terms when analysing socialism.'⁶ Orlando Borrego, first vice minister in MININD, explained Guevara's idea: 'if you change the social system you also have to change the mentality. So "profit" is renamed "record of results".'⁷ The movement of goods between enterprises was called the 'delivery of products' rather than 'commerce' or 'sales', and 'market research' became the 'study of products'. This re-categorisation complemented other measures to transform surplus value into surplus product and counter the workers' alienation under capitalist commodity production. Under socialism, products should be exchanged between enterprises as though they are departments of one factory, the surplus belongs to society, and production is determined by social needs, not by commercial imperatives.

CONSCIOUSNESS

From the age of 17, Guevara kept bibliographical notebooks, listing and commenting on the books he read and adding indexes to these notes. As well as an early indication of his systematic approach to learning, Maria del Carman Ariet García, scientific coordinator at the Che Guevara Study Centre in Havana, who has analysed these notes, said they illustrate:

The importance that he gave to philosophy, as a kind of central axis for the later development of his thoughts ... This being a stage of searching and evolution it is not possible to make absolute statements, but if something is valid from a general reading of the notebooks, it is his permanent insistence on the theme of mankind and its place and development in the world and society.⁸

According to Ariet, Guevara embraced Marxism through his interest in philosophy.⁹ He had read the classical European philosophers, including Kant and Hegel, and had a special interest in Argentinian philosopher José Ingenieros, founder of the journal *Revista de Filosofía* and author of *Principios de Psicología Biológica* which analysed the development, evolution and social context of mental functions.¹⁰ Aged 25 years, Guevara described himself as 'the eclectic dissector of doctrines and psychoanalyst of dogmas'.¹¹

Borrego said that Guevara's emphasis on consciousness evolved as he read the 'young Marx' and was reinforced by his observations in the Soviet bloc.¹² Marx characterised the philosophical and psychological manifestation of capitalist social relations as *alienation* and *antagonism* – the result of the commodification of labour power and the operation of the law of value. For Guevara, the challenge was to replace the workers' alienation from the productive process, and the antagonism generated by class struggle, with integration and solidarity, developing a collective attitude to production. In the Soviet bloc he observed that the prevalence of the operation of law of value and neglect of political education were obstructing the transformation of consciousness.

Capitalist competition drives increases in productivity through technological innovations and intensification of the rate of exploitation. Thus alienation and antagonism increase with productivity. Under socialism, the development of the productive forces could be less accelerated, but it must be accompanied by a growth of consciousness. In the transition to socialism market forces are replaced by planning as workers take conscious control of production – instead of being enslaved by the imperatives of accumulation. The tendency in the USSR was to prioritise the development of the productive forces, raising the material standard of living, in the conviction that the question of consciousness would be resolved subsequently – even spontaneously – at a later stage. Guevara disagreed – consciousness was a precondition of workers taking control of production, it was therefore vital that efforts to change consciousness be incorporated into socialist transition at the earliest stage. Borrego explained: 'Che said communism would be reached much quicker by raising consciousness simultaneously with the productive forces.'¹³

Guevara understood the development of consciousness as a dialectical process – it would increase with the experience of material changes in the standard of living and transformations in the relations of production which would, in turn, reflect back on consciousness. He emphasised political education and skills training, both to accelerate advances in the productive sphere and raise individuals' capacity to understand those material changes from a political perspective. In July 1962, Guevara drew the attention of MININD directors to this process:

How many of you, four or five years ago, said that the [Cuban] Communist Party was shameless and that socialism was absurd? Lots of people said this, or thought it ... But when the socialist stage of development arrived, people began to change their way of thinking. Are they opportunists? Of course they are not ... I also came from the bourgeois class, anticommunist and all that and I learnt a set of truths in

the process of struggle. People have been changing, they have a new mentality ... this is a dialectical process in which everything is changing.¹⁴

The Revolution, Guevara stated, was in the process of destroying the bourgeois state apparatus, but it was also necessary to destroy the ideas associated with that apparatus in people's consciousness: 'Compañeros, I beg you ... read [Lenin's] *The State and Revolution*. Go back to the chapters where he talks about the transition from the old society to the new society and everything that remains in this new society being constructed.'¹⁵ This dialectical understanding of the relationship between consciousness and material reality explains Guevara's acceptance of a combination of material and moral incentives, phasing out material incentives until they are redundant and can be removed without jeopardising production.¹⁶ Incentives are the key to increasing productivity and efficiency in any system – but they become a question of great complexity in an underdeveloped country in transition to socialism. While accepting the need to offer workers material incentives, Guevara emphasised that the form in which they were applied was also important, as shown below:

1. Wage incentives – to increase production by improving qualification and skills levels, rather than just increasing physical output.¹⁷
2. Individual awards for production over the norm (average national productivity) – cash bonus or payment in kind. Guevara least approved this form of incentive, which resorts to the same motivating device as capitalism – personal gain, and fosters individualism. Individual material incentives were largely phased out by the late 1960s.
3. Collective awards for production over the norm – usually payment in kind. These did less to encourage individualism as they forged a team spirit, the impulse to work for the common benefit – albeit a particular group and for material reward. However, Guevara warned of their corrupting potential, pitting the material interests of a work collective against those of society. He referred to technicians in the USSR who battled to lower the plan of production, because:

this means it is easier to over-fulfil the plan and less danger of not completing it; which means greater awards. So between the central apparatus and the enterprise a contradiction is being created – which is not socialist; a contradiction that threatens the development of consciousness ... you see it much more in Yugoslavia, but you also see symptoms in the Soviet Union in my view. The leader of a Soviet enterprise is a production technician and he deceives the central apparatus.¹⁸

4. Material disincentives – deductions from an individual's wages because of failure to meet production norms. Guevara explained: 'We have given this the slightly ridiculous name "material disincentive", but it makes sense. It means we recognise a material incentive in a negative way.'¹⁹ For example, members of MININD's Management Council were docked three days' pay if they arrived late for three meetings or failed to carry out their factory visits.

With serious shortages caused by the US blockade, productivity decline and the budget deficit, the application of material incentives required monetary rewards and consumer goods that were scarce. Jorge Risquet, Minister of Labour from 1967, highlighted the problem: 'How can Cuba emphasize material incentives at a time of serious shortages and economic sacrifices when 90 miles away such goals can be more easily fulfilled? We simply would be creating conditions for the mass migration of Cubans to the United States.'²⁰ Moral incentives therefore had economic as well as ideological benefits.

Socialist emulation

Socialist emulation is fraternal competition between workers, either as individuals or collectives, in the productive sector. It was first used in normal work situations – stimulating productivity in regular paid work. However, with the emergence of voluntary labour in industry, emulation became a principal method for institutionalising moral incentives. Guevara considered socialist emulation to be a fundamental component of this BFS, as Cuban economist Carlos Tablada explained:

As against the competition generated by the law of value, Che counterposed a fraternal competition based on socialist comradeship that favored emulation. The Cuban Revolution was characterized from the outset by broad mass participation ... Che worked to establish the same approach in the economic sphere, in the process of laying the material and technical basis for socialism.²¹

Several projects were tried out to promote participation in emulation. Prizes were presented to workers at official and public ceremonies for extraordinary effort or productivity. Initially, workers tended to receive hybrid prizes, part material and part moral. Material awards sometimes included cash, but mostly goods such as refrigerators, housing, vacations and travel to eastern Europe. Later, material incentives were phased out in favour of moral incentives to emulation, and by late 1965 and early 1966, cash prizes were abolished. Moral awards included symbolic flags and plaques at ceremonies which usually took place on historic dates commemorating Cuba's 500-year struggle

against colonialism and imperialism. This linked increased productivity with consciousness, and a socialist work ethos with national pride. In his analysis of moral incentives in 1960s Cuba, Roberto Bernardo described 'Festive-like voluntary work projects in agriculture' as providing a 'play motive' to socialist emulation.²² Assemblies were convened in all the work centres to elect the most productive and dedicated workers into the 'advance guard movement'. Bernardo observed:

Competition was to be fraternal marked by nonsecrecy [*sic*], a spirit of camaraderie about the whole process and willingness to share one's superior method. Fraternal competition takes place among individuals and groups, for example, among brigades, sections, factories, regions and the like. In addition there are *ad hoc* and task-oriented emulations.²³

In 1963, a National Emulation Committee was set up with provincial, regional and local emulation commissions presided over by the Ministry of Labour. Every Consolidated Enterprise (EC) within MININD had an emulation office and trade unions monitored the implementation of the indices measuring worker performance. For example, 100 points were awarded for completion of the plan, with an extra three points for every percentage point by which it was surpassed, and a deduction of six points for every percentage point by which it was not met.²⁴

Tablada pointed out that Guevara 'was interested not only in the system's concepts and procedures, but also in how well they were grasped by the workers'.²⁵ Already by March 1962, Guevara complained to his directors: 'we have let emulation fall by the wayside ... Emulation has to be the base that constantly moves the masses and we should have people who are constantly thinking of a way to liven it up.'²⁶ In response to *compañeros* complaints that the National Emulation pamphlet put workers off by its extraordinarily complex scoring system, Guevara revealed that the pamphlet was the product of six months' work and consultations. MININD directors should use and adapt it. He cited an Argentinian phrase, 'Do things badly, but get them done', adding:

Last year we did a very bad emulation on sugar, but it was emulation. This year we are waiting. There are commissions of the Central Planning Board [Junta Central de Planificación – JUCEPLAN], and a commission of the CTC [Central de Trabajadores de Cuba – Cuban Workers' Central Union], a commission of the ORI [Organizaciones Revolucionarias Integradas – Integrated Revolutionary Organisations] and super-commissions and quite an extraordinary technical super-study, and in a nutshell we continue going round in circles. All of this was ready in November, and we have waited three months without doing anything.²⁷

Criticising himself for accepting JUCEPLAN's bureaucratic proposals, Guevara urged MININD directors to go ahead with emulations based on the pamphlet, to gain experiences in order to improve in the future. A year later, emulation award ceremonies were taking place monthly in MININD and the top prize was for a worker to sit with Fidel Castro for the May Day celebration.²⁸ Other complaints emerged from MININD directors in summer 1964 – this time about the quantity of goals set by distinct institutions for emulation within and between ministries. Manuel Marzoa Malvezado, director of the EC of Basic Chemicals, pointed out that 'to be real all of them have to be made concrete in the factories ... for emulation to be alive and understood it should be as simple as possible so that the worker can make it their own. There needs to be one only and not many which is confusing and doesn't allow the workers to analyse the comparison of the emulation.'²⁹ Guevara assured them that he would discuss the problem with the Minister of Labour and with the CTC so that the indices used to measure emulations were meaningful to the masses.³⁰ He insisted that achieving extra points or reaching production goals should not be the main aim of emulation. The productive side was important, he said, but 'the real importance of emulation is educational; it has to reach the masses to be educational, because otherwise, it educates people who already have political education like the directors, like people in management'.³¹

While people had been mobilised by important dates, Guevara noted, they were more inspired to participate in emulation by the example of outstanding workers, like Reinaldo Castro who became famous in the 1962 sugar harvest for hand-cutting 1,000 *arrobas* (around 11 tons) a day in nationwide emulations. In 1963 he cut 2,308 *arrobas* in eight hours (leaving the piles in the field). Reinaldo Castro himself recalled that during the competition, 'Che was there. He spent the whole afternoon observing me cut cane. He looked at me as if he was calculating, because he already had the combine harvester in his mind.'³² In 1964, he was named National Hero of Work. Guevara said: 'This kind of person is, let's say, the highest expression of work and people aspire to be trailblazers like Reinaldo Castro and other vanguard workers.'³³

A movement was built around sugar harvest emulations. Jorge Risquet, a military commander and party member in Oriente at this time, explained:

We created the Millionaires Movement in which a *machetero* had to cut a million *arrobas*, each *aroba* has 11.5 kilogrammes. In the first year we had 11 brigades with 48 men in each, then it became a national movement ... Organised into brigades, their work became collective for the first time ... this task of organising emulation was very arduous. But Che praised this Movement a lot.³⁴

Designating poor sugar workers as ‘millionaires’ had a socio-psychological impact, elevating the importance of productive capacity over financial wealth. Emulation was a means of encouraging Cubans to work harder, either in their day job or in voluntary agricultural projects. The incentive to compete was moral, with some material awards in the first half of the 1960s. As voluntary labour was institutionalised, emulation served to consolidate the moral incentive to unpaid work, linking consciousness to production through the use of decommodified labour power. This was an experimental process, a process of learning by doing and of constant vigilance against bureaucratisation.

Voluntary labour

There were many precedents to Guevara’s emphasis on voluntary labour – from Lenin’s ‘Red Saturdays’ in the early years of the Bolshevik Revolution, to 1946 in Cuba when José A. Ruiz, the communist mayor of Yaguajay in Las Villas, convened the population to clean up the town. In Yugoslavia in August 1959, Guevara had seen voluntary labour work brigades formed of students who were being paid to build a road. Omar Fernández Cañizares, his deputy on the official visit, recalled: ‘Che said this was impressive, it united the people and anyone could do it. The problem was that we didn’t have money in the National Bank to pay for voluntary labour. He said that if the Cuban youth accepted it without payment it would be a triumph.’³⁵ Guevara consulted the Association of Rebel Youth – predecessor of the Union of Young Communists (UJC) – suggesting that it be applied in Cuba, for building not just roads, but also hospitals, neighbourhood housing and offices. Consequently, voluntary labour took off in Cuba – first, in social construction projects, then the agricultural sector and by 1963 in industrial production.

This latter innovation was initiated by Ángel Arcos Bergnes, MININD’s head of personnel in 1962 and director of the Light Mechanics branch in 1963. Tobacco exports were being jeopardised because several production units within his sector were behind in their own plans – the factories producing metal rings which hold each cigar, the wooden boxes and the box seals. At Arcos’ suggestion, extra work shifts were added in the evening and at weekends with the work of volunteers from the factory responsible plus others from throughout the branch. In Arcos’ view: ‘That was the spark which turned into the flame of voluntary labour in the Ministry of Industries and in other institutions in the country.’³⁶ Three months later, Guevara joined in at the factory making wooden cigar boxes, further enthusing the branch’s employees who worked alongside their minister. Given the project’s success – weekly production rose by 50 per cent with voluntary labour – Arcos began to expand its implementation throughout the production units in his branch. Guevara

was enthusiastic and monitored the movement's development, instructing Arcos to keep him informed of all progress and problems.

In October 1963, Guevara created the Red Battalion within MININD – initially consisting of ten brigades with ten ministry workers in each committed to a minimum of 80 hours' voluntary labour in six months. Already by January 1964, the number of brigades had doubled to 20. Guevara was head of the Red Battalion, Luis de La Fe, general director of administration in MININD, was deputy and Arcos was coordinator – responsible for organising the work, including transport, sustenance, and so on.³⁷ The first work session of the Red Battalion was on a Sunday in early November 1963, when 60 MININD participants went to a glass factory. They also participated in the sugar cane harvest.

One weekend, having organised for the Red Battalion to cut sugar cane in Pinar del Río, Arcos was preparing to head home when he came off guard duty at 4am. He had been guarding the entrance to the ministry since midnight. Che strolled out of the doors at 3.45am with his bodyguard, known as 'El Chino'. He congratulated Arcos for arriving early for voluntary labour and challenged him to a competition in the field. When Arcos explained that he had not slept, Guevara replied: 'Even better, then we are in the same state, because I haven't slept either, so we can emulate without either one of us having the upper hand.' Then he added: 'in reality you will have an advantage because I have asthma right now, so let's go ...'.³⁸ They arrived in the field and began cutting cane side by side to compete better. On Guevara's left was El Chino, a *machetero* pre-1959 who, according to Arcos, 'was a cane cutting machine'. By 9am, Arcos was exhausted, spurred on only by Guevara's taunts: 'I'm winning ... speed up ... we're here to work, not look at women ... wake up!' When Guevara stopped to buy bread, he told Arcos that, as the loser, he would have to pay, because the minister did not have a centavo on him. Arcos responded bitterly that Guevara was only winning because El Chino, on his left, was throwing half the cane he cut onto the minister's pile. Guevara joked back: 'You pay anyway, because you had sufficient time to notice this detail, and I didn't!'³⁹

A proposal arose within the Light Mechanics branch to issue bonds and certificates for participation in voluntary labour as a kind of receipt, symbolic payment for work carried out for society, evidence of the effort invested, and as an incentive. They became a form of currency. Six blue bonds, each issued for four hours' labour, could be exchanged for one green one, meaning 24 hours' work. The bonds themselves had the profiles and quotes of Cuban national heroes: José Martí, Antonio Maceo, José Antonio Mella, Camilo Cienfuegos and Fidel Castro. The latter was quoted: 'We will have what we are capable of producing.' After six months, the bonds were exchanged for

'communist certificates'. The first award ceremony took place in the theatre of the CTC in January 1964. Guevara handed out communist certificates. Those who had completed 80 hours of voluntary labour in the last four months of the year were labelled 'members of the Red Battalion', those who had done 160 hours were 'distinguished members', and those with 240 hours were 'vanguard members'. During the ceremony, Guevara gave special recognition to Arcos, 'whose enthusiasm applied to a concrete task has resulted in a massive mobilisation in his branch'.⁴⁰

The three most outstanding workers were a man with 980 hours of voluntary labour, additional to his day job, which meant doubling his work day; a worker over 70 years old; and a woman with 340 hours, the maximum by a woman. Guevara announced that in the last four months of 1963, 774,344 hours of voluntary labour had been carried out in the Vice Ministry of Light Industry, more than half of that in Arcos' Light Mechanics branch. The volunteers were like sportsmen, he said, who dedicated themselves to win a race. Despite his aesthetic criticisms about the certificate's design, Guevara described them as

an extraordinary success. There are people who in four or five months of emulation have won three certificates; 240 hours three times which means 720 hours. In four months there are 960 hours in an 8 hour working day and these people have 720 additional hours that means that they are working five or six extra hours a day including Saturdays and Sundays to win one of these certificates. That has to make us think. This is fantastic.⁴¹

Guevara hoped to enthuse all MININD's EC directors to participate, until they all achieved a certificate of 240 hours within one year – equivalent to over four hours' voluntary labour every Sunday.⁴² 'We are trying to create "the spirit of October" all year, every month, every day, in all the *compañeros*', said Guevara, in reference to the rise in production and productivity during the Missile Crisis in October 1962, as workers rallied to defy imperialist intimidation. Even bureaucrats had been animated by this spirit – suddenly papers had flown around and problems had been solved.⁴³ The phenomenon was repeated when voluntary labour brigades sprang up in October 1963 after Hurricane Flora wreaked havoc on the island. The spirit of October was 'This spirit of considering one's work at any moment as a fundamental task for the country, whatever it is, however humble or simple it is.'⁴⁴ Through emulation, Guevara viewed voluntary labour as an instrument to embed that spirit outside moments of crisis.

The certificates were only awarded for productive work, not administrative jobs. According to José Luis Puñales, director of the EC of Beer, which accumulated 1 million hours of voluntary labour in 1964, workers'

incorporation into voluntary labour demonstrated how their mentality was transforming. He pointed out that 240 hours of work in addition to regular employment was not easy:

We practically donated our holidays to this work. Che usually controlled the last hours of the 240 and said where you would do it. He was convinced that voluntary labour had to be hard ... For us it was practically an award. We were proud of our contribution. When we began we were few, but it became normal, all the workers committed to voluntary labour. This is what Che called leading by example.⁴⁵

That the award ceremony took place in the trade union theatre signalled that the CTC had embraced voluntary labour in both theory and practice. Prior to that, some trade union leaders had objected to voluntary labour in industry and particularly to the system of bonds and certificates. Lázaro Peña was General Secretary of the CTC – a position he had held back in 1939, until being forced into exile by the Batista dictatorship.⁴⁶ In September 1963, he was invited to attend MININD's Management Council to discuss these discrepancies and concerns. The trade unions, he informed them, only supported voluntary labour in agriculture or on historic dates. Both Arcos and Guevara replied, emphasising the movement's importance, not in terms of production, but in relation to consciousness. Guevara made it clear, however, 'that whether the CTC likes it or not, the Light Mechanics branch, the other branches of production, and the Ministry of Industries will continue promoting voluntary labour ...'.⁴⁷ Privately, Guevara believed that this opposition by trade union leaders was due to their own reluctance to get up early on Sunday mornings to carry out manual labour, rather than to ideological principles or in defence of the working class. After analysing the issue, the CTC resolved to fully support the movement. In August 1964, speaking to open the second award ceremony for communist certificates, Peña declared:

The trade union movement is working increasingly every day to extend and deepen consciousness in its ranks, consistent with their class duty, doing everything possible to improve production, services and other tasks for the wellbeing of the people ... We will carry out all the voluntary labour needed, but no-one should believe that doing it gives them the right to reduce production the following day or to break labour discipline.⁴⁸

Within MININD, not only did most trade unionists support voluntary labour but, along with the representatives of the United Party of the Socialist Revolution (Partido Unido de la Revolución Socialista – PURS, which replaced in ORI in 1962) and the UJC, they demanded to be put in charge of organising the movement, arguing that it should be in the hands of political leaders, not

administrative ones like Arcos. On Easter Sunday 1964, 1,000 workers were to be mobilised onto 20 trucks to transport them to the countryside. PURS secretary and assistant to Borrego, Rosario Cueto Álvarez, complained that Arcos could not organise this alone. With Yolanda Fernández Hernández, another young female trade union leader, they went to the cane fields, marked out the furrows and ensured that the day's work was organised. Following their success, Cueto Álvarez insisted that the trade unions and political groups take over responsibility. Guevara replied: 'Rosario, it is true that in the beginning I didn't have confidence that the trade unions could mobilise and organise everything, but today I see that you can. You are right – it is true that this is a trade union task.'⁴⁹ The responsibility passed into the hands of the trade union leaders.

Cueto Álvarez took up Guevara's challenge for another of the Red Brigades to compete against the one he led. She recalled:

The emulation was pretty equal, and then we discovered that Che was sending one of his escorts to spy on us so we started to do the same. It was so hard fought that with pain I have to confess that when I was informed that Che was having an asthma attack I was pleased because it gave us an advantage in the cane cutting. According to the calculations of the regulator [referee] my brigade won!⁵⁰

Guevara was a sore loser, but when the National Institute for Agrarian Reform (INRA) challenged MININD to a contest, he asked Cueto Álvarez how she had won. 'I told him everything; I confessed that when I heard that he had an asthma attack I was pleased. He split his sides laughing when he heard that!'⁵¹ Cueto Álvarez pointed out how the emulations spread the practice and enthusiasm for voluntary labour: 'If I hadn't emulated Che, I would never have cut cane because I don't like it. I did it so that he wouldn't win against me, but a woman who cuts 200 or 300 *arrobas* in one day yields economic results. It was the same in industry as in agriculture.'⁵² By summer 1964, the Ministry of Sugar (MINAZ), just created with Borrego as minister, and the Ministry of Justice set up their own Red Brigades and began awarding bonds and certificates. They challenged MININD to cross-ministerial emulations.⁵³ INRA, the National Bank, the Ministry of Work (Ministerio de Trabajo – MINTRAB) and the CTC also formed brigades to join in the movement of voluntary labour organised by MININD.

To fulfil its political function, voluntary labour must be well controlled. Guevara made several stipulations for carrying it out correctly: claims of hours worked must be independently verified, the educational function of voluntary labour was to be emphasised over its economic benefits (decommodification

not accumulation), and workers must not be obliged to participate but do so out of sense of moral compulsion.

During work in the sugar cane harvest, Guevara insisted that regulators be present to check the quality and quantity of the work being carried out by volunteers and to arbitrate the competition. This meant ensuring that work was well organised, as Fernández Hernández recalled: 'If the work is organised, afterwards you can talk about how much was done and what volunteers are responsible for. This guarantees that the work is awarded.'⁵⁴

MININD inspectors were sent to investigate the calculations of hours worked whenever there were doubts.⁵⁵ In the January 1964 ceremony, Guevara listed but did not award certificates to group of workers whose claims had been submitted too late for verification.⁵⁶ In August 1964, he admitted to being sceptical about the claim that Félix Arnet, the worker with the most hours of voluntary labour, had contributed 1,607 hours in six months – the equivalent of 200 work days: 'In six months there are 182 workdays, which would mean that this comrade has worked much more than a work day of eight hours on top of his normal work. So we decided to carry out an inspection. The inspection confirmed the absolute honesty of the *compañero* Arnet.'⁵⁷

Commentators outside Cuba have pointed to the economic rationale behind the emphasis on moral incentives and voluntary labour – that of capital accumulation.⁵⁸ Attempts to calculate, in economic terms, the contribution of that work to Cuba's economic development are useful in illustrating the scale of mobilisation involved. And clearly, there were significant economic benefits. For example, in the first six months of 1964, 1,683,951 hours of voluntary labour were carried out in MININD alone – equivalent to over 70,000 full days or 210,493 work days; all unpaid.⁵⁹ However, such a focus obscures the essential point: the educational and ideological function of voluntary labour. Guevara said: 'The importance of voluntary labour is not reflected in the directly economic aspect that could be reported to the enterprises or to the state.'⁶⁰ Borrego dismissed the view that voluntary labour is a cheap form of exploitation, generating surplus value:

Voluntary work under socialism is for social and collective benefit. No one would do voluntary labour in a private capitalist enterprise. It is a concept of production that cannot be compared with capitalism. Here production has a social content. Part of the surplus product goes to investment to develop the country and part to social benefit. Che insisted that voluntary labour be seen as a social duty from which you obtain indirect benefits.⁶¹

This was consistent with Guevara's notion of undermining the law of value through the decommodification of labour. Dedicating labour power, without

financial compulsion or compensation, to different economic sectors helped steel the concept of work as a social duty and made workers conscious of problems and progress in national production as a whole. Guevara repeatedly argued that voluntary labour had a political education function which could be converted into 'a useful instrument to accelerate along the path towards communism'.⁶² Participation in voluntary labour reflected a growing social awareness acquired at work, a commitment to the socialist transition project, the demonstration of a communist attitude that would carry the masses along by its example.⁶³ It was a step towards Marx's vision of a communist society: 'from each according to their ability, to each according to their need'. The incentive was moral, recognition of an individual's merit as a worker. A new society could not be built without sacrifice.

Voluntary labour served to close the traditional gap between manual workers and administrators or intellectuals – combating bureaucratic estrangement from production and heightening class awareness. Guevara told MININD directors: 'more than 80% of us here come from the petit-bourgeoisie, a class with distinct ideological scars which cannot be got rid of just because the system changes. It takes constant ideological work to correct this.'⁶⁴ He believed that voluntary labour, particularly tough manual tasks, was an important part of that ideological work. Miguel Ángel Duque de Estrada Ramos, director of MININD's Office of Special Issues, confirmed that, 'at that time, those of us from the petit-bourgeoisie were a majority and voluntary labour helped us develop a social conscience'.⁶⁵ Bureaucrats and ministry workers learnt about industrial production processes which they would otherwise only know through documents and statistics. They worked as equals with factory or agricultural workers – EC directors got to know their subordinates and could experience the problems of production first-hand. Fernández Hernández said: 'Through voluntary work I learnt to concern myself with the flow of production, with product quality, labour discipline, the organisation and normalisation of work, training and daily heroism in industry.'⁶⁶ In this way, she argued, Guevara was successful in linking consciousness with economic production:

We spoke with the workers, we toured the factory. Che described the new machines that would be purchased and those which were obsolete. He always made a concrete speech, gave thanks and said what had been produced. He assessed the cracks, the leaks, contacted the directors. It was a movement which allowed the workers of MININD to be linked to production.⁶⁷

Likewise, it broadened the concept of a 'vanguard' beyond those who had fought to overthrow Batista, integrating the mass of workers in the

revolutionary transformation of social relations – the construction of a new socialist society.

Guevara insisted that workers were informed of the concrete results of their sacrifice. Inventing chores was aimless and put people off by wasting their time. He complained: ‘Last Sunday I took part in voluntary labour and wasted my time ... I was looking at my watch every 15 minutes ... we have to achieve the identification of man with the work, we have to organise it.’⁶⁸ Voluntary labour must be productive and necessary – responding to needs as they arose in the factories, fields and workshops, not be programmed by bureaucrats. One worker’s voluntary labour could not be the cause of another’s unemployment, so it had to be practised outside of normal working hours and routine work – catching up with backlogs, in repairs, and so on.⁶⁹ And voluntary labour on Sunday could not use up the factories raw materials so that they were paralysed on Monday.

The value of voluntary labour was undermined when workers felt obliged to participate. Guevara said: ‘one of the things that I consider fundamental and important is that voluntary labour is not obligatory’.⁷⁰ On the other hand, Guevara advocated what he called ‘parallel traction’- leaders pulling the masses along by their own example – and challenging accepted behaviour patterns. Voluntary labour was an expression of a ‘communist attitude towards work’ – which was lauded as the ideal social paradigm – creating an incentive to workers. He said: ‘We advocate the system which Fidel has baptised “moral compulsion”. This method has given good results up to now, even though it has not been carried out in the methodical way required and we have fallen into bureaucracy at times.’⁷¹

The vanguard could use their personal example as a form of moral compulsion, but they could not make participation obligatory. There was a fine line between moral compulsion and obligation, which the youthful exuberance of trade union cadre in MININD threatened to cross. A complaint was once lodged against Fernández Hernández, who was accused of getting cross with a worker who was unavailable for work one weekend. Guevara reprimanded her: ‘Che told me that this wasn’t right; there were workers with personal problems who truly could not go ... I was young and I did not understand that, I just thought that they had a political responsibility that couldn’t be missed. I had to overcome this. I spoke to compañeros, if they didn’t go one day they went another.’⁷² If work was to become a social pleasure, it was imperative that the impulse to participate came from the workers themselves.

Miguel Figueras, director of the Perspective Plan in MININD, was young and enjoyed going out on Saturday nights. While Guevara criticised, he never obliged him to work on Sunday mornings. But Figueras was compelled by his example, and so in March 1965, on completion of a major project he

told Guevara that he could stop criticising because all the workers from his department were going to cut sugar cane for one month: 'Che replied that I wasn't doing any more than carrying out my duty.'⁷³

Leading by example became a management principle in MININD. Guevara said: 'no one has the right to recommend what they don't feel capable of doing; from voluntary labour to daily work, the enterprise directors should lead their *compañeros*'.⁷⁴ As Cueto Álvarez pointed out, establishing this leadership principle in relation to voluntary work meant it spontaneously evolved into mass mobilisation – beginning with the 1,000 administrative workers in the ministry, it swept up the workers in every workplace in the country.⁷⁵

Risquet stated that, 'through his example, Che turned voluntary labour into an expression of a healthy man and the will to work for society'.⁷⁶ Eugenio Busott, MININD's director of General Services, admitted that in emulating Guevara, 'We started to see our comrades in a more humane way. I started to feel a great sense of camaraderie, especially through voluntary labour because you give something without personal gain. We participated willingly, lovingly, and we felt great. No amount of money in the world can buy that feeling.'⁷⁷

Voluntary labour was one of many mechanisms Guevara created to reverse mankind's alienation, changing the social relations of production and undermining the law of value at its root. However, Guevara's final reflection on the subject reveals his understanding of how far there was still to go until work genuinely became a social pleasure:

There is a very beautiful phrase from Mao, where he says something like 'man as an alienated being is a slave of his own production', a slave to work, surrendering his work, surrendering part of his nature with it and that he only realises himself as man when he does things that are not necessary to his physical being – when they are transformed into art or, for example, when he does voluntary labour or something that yields a little for society, something that man gives. We still have not achieved the point when man gives, rather we have created an apparatus where society sucks up voluntary labour ... it is quite distinct. That man feels the internal necessity to do voluntary labour is one thing. That a man feels the necessity to do voluntary labour because of the environment is another. The two should be united. The environment should help man feel the need to do voluntary labour, but if it is only the environment, the moral pressure that obliges man to do voluntary labour, then the evil of man's alienation will continue. That means they are not doing something intimate, something new, done in freedom so they don't remain a slave to work.⁷⁸

By 1964, trade unions in MININD agreed to accept 40 hours' pay for a 44-hour working day – thus creating another form of voluntary labour. By the second half of 1969, overtime pay had been eliminated in Cuba.⁷⁹ However, this and other measures were introduced after Guevara's departure from Cuba,

and the consequences of such policies should not reflect directly on him.⁸⁰ In 1965, Fidel Castro announced the goal of a 10 million-ton sugar harvest in 1970, and from then on, voluntary labour was focused in agriculture to that end. Jacqueline Kaye, who witnessed this mobilisation during her stay in Cuba, wrote: 'The Revolution is attempting to rehabilitate the *zafra* [harvest] as a symbol not of exploitation but of independence and achievement, and it is an attempt of some psychological complexity which it is difficult for us to appreciate fully.'⁸¹ By 1968, 15–20 per cent of the agricultural labour force was estimated to be made up by non-agricultural workers. Silverman concluded that 'Such a transfer of labour could only make economic sense if it was based on moral rather than material incentives. Cuba's investment into social conscience could be tapped.'⁸²

Guevara did not invent socialist emulation or voluntary labour – but he did promote and systemise it, adopting it as one of many mechanisms applied in MININD to link consciousness to production outside moments of crisis. These remain vital tools in Cuba's socioeconomic and political infrastructure.

The Rehabilitation Centre at Guanahacabibes

The Rehabilitation Centre at Uvero Quemado, in Pinar del Río province in the east of Cuba, was on the Guanahacabibes peninsula, the name by which the Centre became known. The Centre had two significant characteristics: first, MININD sent only management personnel there, not production workers; second, going there was optional – those who did not accept the reprimand could reject it by leaving MININD. Given the voluntary nature of the camp, and its political education function, Guanahacabibes is assessed as part of the BFS apparatus which aimed to raise consciousness. It was a kind of moral 'disincentive'.

The roots of Guanahacabibes lay in the hard labour camp set up by the Department of Education of the Rebel Army on Cayo Largo in 1959 for soldiers under reprimand. Guevara was involved with Cayo Largo in his capacity as head of training for the Rebel Army. Cayo Largo is a sandy, mosquito-plagued island around 25 kilometres long and 3 kilometres wide. Some 200–300 members of the Rebel Army were sent there rather than to prison for undisciplined behaviour or pretty crimes. They worked on construction. Cayo Largo was not considered safe for civilian projects because of the threat of military attack; it is close to the Playa Giron where the Bay of Pigs invasion took place in April 1961.

After the Department of Industrialisation was set up, Guevara sent Jorge Ruiz, an architect and leading member of the 26 July Movement (M26J), to assess the camp. Ruiz described the tough conditions:

The soldiers remained armed due to prevailing myths created during the revolutionary process that no one could be disarmed. There were no women, no drink ... you had to be in the water between 5pm and 10pm because the air changed and the mosquitoes would eat you ... Cayo Largo was very primitive; those in charge had the capitalist world as their frame of reference. There was a rock that jutted out 300 metres and the directors at Cayo Largo would make soldiers sit on the rock for four days to punish them. It was very bad, lots of mistakes were made.⁸³

Edison Velázquez, head of Inspections in the Department of Industrialisation, became the first director Guevara sent to Cayo Largo, following a complaint that he had abused his authority by harassing a female colleague. Guevara was most demanding on his closest collaborators, so even though the complaint was anonymous, he insisted it could not be ignored, particularly because Velázquez's role demanded unquestionable moral integrity. Velázquez, who denied the accusation, explained:

We could argue with Che. We were both revolutionaries. We were both annoyed. He said that this undermined the trust they had placed in me. This was unjust. I continued this polemic with him for many years. I always held a grudge about it. He sent me to Cayo Largo, where I worked in construction and did guard duty, while the crocodiles walked right past. A plane came once a week with correspondence and to take away the sick.⁸⁴

Velázquez sent a note to Enrique Oltuski, a management colleague in the Department of Industrialisation, telling him to ask Guevara if he could return early. Guevara replied that he was very pleased Oltuski had raised the issue as he had discovered a new quality in him – solidarity. He told Oltuski that he could replace Velázquez in Cayo Largo if he wanted.⁸⁵ Needless to say, Oltuski declined the offer. Guevara was intransigent about the need for discipline and accountability.

Ruiz recommended that the camp at Cayo Largo be closed down and inmates either be given licence to return to the armed forces, be sent to prison to finish sentences for crimes committed, be sent to school, or just be released. Cayo Largo was gradually transformed from a punishment centre into fishing centre and tourist resort, which it remains today.⁸⁶ However, during this process, Ruiz said that Guevara got so annoyed with the people in charge there that he wiped his hands of the issue.⁸⁷ Meanwhile, he sent Ruiz to find an alternative venue for a rehabilitation camp for MININD which would have an educational function. Ruiz chose the Guanahacabibes peninsula.

Before the Revolution this territory belonged to a US logging company, and a small community of 20–30 woodcutter families lived there. After 1959 they began to replant trees – pines, eucalyptus and fruit trees – and the area

was occupied by the Ministry of the Revolutionary Armed Forces (Ministerio de la Fuerzas Armadas Revolucionarias – MINFAR) as a strategic position. From mid 1960, MINFAR set up a work camp and sent soldiers there as a form of punishment. They were joined by students who had abused foreign scholarships and been expelled from the socialist bloc countries. In 1961, Guevara began to send MININD directors to Guanahacabibes to assist the labour force, as did other ministries. The men slept in the open air until they had made tents, then wooden huts, then houses of cement and iron. They constructed a landing strip for small aeroplanes, including Guevara's. A report in November 1962 listed 56 people there under sentence – 35 from MINFAR, ten from the Ministry of Education, five from MININD, two from INRA and one each from MINTRAB, the Ministry of Foreign Relations and the Ministry of the Interior.⁸⁸ MININD sentenced people to one, three, six or twelve months at Guanahacabibes. In setting up the Centre, Ruiz said: 'We had learned from our revolutionary principles about the errors committed in Cayo Largo. You have to understand Guanahacabibes as part of an integral system in MININD. It was physically tough but it was more moral than physical.'⁸⁹ There was no legislation for sending bureaucrats there – it was an initiative which Guevara took despite opposition from many in the Revolution's leadership, but which was then followed by other ministries.

In MININD, Guanahacabibes was for those who had committed administrative errors. Those accused of criminal activity were sent to a normal criminal court. Initially, Guevara himself determined the punishment for administrative failings, such as adjusting inventories, carrying out unauthorised investments, ignoring MININD regulations, other miscalculations and nepotism which jeopardised production and the plan. According to Juan Borroto, MININD's head of supervision, Guevara 'told us that he had made a mistake at the beginning by taking unilateral decisions'.⁹⁰ He set up the Administrative Disciplinary Commission (CODIAD) to examine and rule on each case instead. CODIAD could recommend anything from three days suspension of pay to a sentence at Guanahacabibes as the most severe measure.

Compañeros sent to Guanahacabibes travelled alone – a journey involving several buses, trucks and a long walk; a distance of 350 kilometres from Havana, taking five to six hours. All of which reinforced the voluntary nature of the reprimand – directors had plenty of time and personal incentive to pull out; only a sense of moral compulsion would stop them doing so. Their salaries were reduced to a minimum during the sentence, although MININD's director of personnel was responsible for ensuring that the compañeros' families did not suffer as a result. This was Arcos' job from 1962 to 1963, along with preparing a report which detailed the errors committed and which the managers hand delivered to the Centre's director, Barbaro Camejero. He discussed it

with them and explained: 'why you needed to work on your character to be part of the revolutionary vanguard'.⁹¹ Arcos said: 'If you live 25 or 35 years under capitalism, you retain many characteristics from capitalism. You work under socialism, you are a socialist and a revolutionary, but your old life has influenced you. If you made an investment that wasn't approved, it didn't benefit you, but you were undisciplined.'⁹² The first directors of Guanahacabibes were from MINFAR. Arcos described them as bandits who directed the Centre badly until they were exposed and sacked, replaced by Camejero who understood the educational function which Guevara assigned to the place. After the day's work, Camejero organised evening study circles until 'lights out' at 10pm.

In January 1962, Guevara complained that it was a conceptual mistake to regard Guanahacabibes as a feudal punishment. It was a revolutionary penalty for revolutionaries who committed mistakes and who should know better, he said. Doubtful cases should not be sent to there and criminal acts should be punished with prison, whoever carried them out:

To Guanahacabibes are sent the people who should not go to prison, people with more or less serious failings of revolutionary morality with the simultaneous sanction of removing them from their posts. In other cases it is not punishment but a kind of re-education through work. The work conditions are hard, but not bestial. And they are in charge of improving those conditions themselves.⁹³

He acknowledged that some *compañeros* considered Guanahacabibes to be an unjust reprimand, but insisted that people who had been sent there had even enjoyed creating vegetable patches or making scarecrows. 'I have recommended to the *compañeros* on the Management Council of the ministry that they go', he said, and listed among the chastised a top political leader and a foreigner who gave lessons to the others:

I haven't seen anyone leaving feeling bitter or indignant. One should not have this concept of Guanahacabibes [as a feudal punishment] or there is the risk that people who go there think of it as the end of the world. We don't consider it that. And people go to Guanahacabibes to work; it isn't their undoing or anything like that ... What's more, those who go to Guanahacabibes are those who want to go. Those who don't want to go leave the Ministry. No one should go to Guanahacabibes who does not want to go, leave and work somewhere else. There is no opposition to this.⁹⁴

Guevara pointed out that the army punished indiscipline at Guanahacabibes. Given that many MININD managers had been in the Rebel Army or in the urban underground, it is understandable that they would accept the concept

when applied to industrial management. He stressed that many peasants had lived their whole lives in tougher conditions.⁹⁵

In the ministry meeting of July 1962 there was a detailed discussion about three directors, all present at the meeting, found guilty of administrative errors. Only one of them had been sentenced to Guanahacabibes. These cases illustrate the kind of administrative indiscipline involved and how the each situation was judged on its merits. Guevara admitted:

It is true that our justice system is applied a little elastically, reprimands are not the same for everyone because there are antecedents ... this is established in justice systems throughout the world, from bourgeois justice to socialist justice ... It is evident that justice cannot be applied mechanically, nor do we have set squares or electronic machines to impose penalties in every case. We need to investigate every case ... we don't have a set square for Guanahacabibes.⁹⁶

The first case concerned the director of the EC of Pharmaceuticals. A National Commission investigating the situation of medicines in Cuba had claimed that the enterprise was not making use of the raw materials in its laboratories. The EC denied this without checking, and compiled a new list of supplies it required from abroad for the Ministry of Foreign Trade. The director, Rubén Vicente, was not present when the Commission investigation took place, but on his return he did not seriously investigate its recommendation that serum could be made in Cuba, saving the country 500,000 pesos annually on imports. The reprimand was applied not just because Vicente lacked knowledge of the materials in the EC storage, of which most directors were guilty, but because he had ignored the Commission's report simply because he objected to their attitude. As he had previously been sanctioned to one month in Guanahacabibes for an unrelated administrative error, he was dismissed from his post. Guevara insisted: 'we have to demand that enterprise directors have "sole responsibility" for the care of the enterprise. This has to serve as an example to everyone. We have fallen into a rut of irresponsibility as a ministry – we have entered a stage of irresponsibility at all administrative levels of this government.'⁹⁷ Claims and denunciations had to be investigated. The director should have asked the Department of Supervision to investigate the laboratory.⁹⁸ Vicente accepted his substitution, criticising ministry managers who failed to investigate the ECs to detect errors.⁹⁹

The second case involved Manuel Marzoa Malvezado, director of the EC of Basic Chemicals, who was sanctioned for one month in Guanahacabibes for 'poaching' a technician from another enterprise without the appropriate vice ministerial approval. That meant persuading a specialist to transfer from another institution to his own. Guevara said this was: 'against all the norms

that we have established and discussed, [workers should not be poached] from any state apparatus, least of all from within the ministry'.¹⁰⁰ This was contrary to all his efforts to forge a collective concern for national production – rather than competition between enterprises or their managers. Marzoa, who had already served his sentence at Guanahacabibes and returned to his post, spoke to clarify that he was not sent to Guanahacabibes for 'poaching', but for contracting an engineer for a management role without authorisation from the relevant vice minister.¹⁰¹

In the third case, the director of the EC of Cigarettes, Marco Agüero, was to be replaced for an error 'that was not extremely serious, but indicates failings in administrative discipline, with the previous record of not being a brilliant director, nor of being new'.¹⁰² Agüero accepted the dismissal and said he hoped it served as an example to other directors.¹⁰³ In Guevara's schema, it was vital that directors were enthusiastic and committed to improving production. When they no longer felt capable of sustaining that work they should say so and move into a role with less responsibility and less work:

To lead a revolution, to have the greater or lesser glory of participating in a management post in the construction of socialism, it is vital to be committed ... to be concerned throughout the day with whether the enterprise is advancing or not ... We have to revive the policy of continuous demands. Evidently, we first need to have the authority to demand because we have fallen slightly into complacency, into peaceful coexistence with errors.¹⁰⁴

Leading by example meant accepting responsibility for social production and self-transformation through the process of revolutionary transition. Guanahacabibes was one of the experimental solutions employed in MININD to foster these new attitudes. Ensuring that the educational function of Guanahacabibes was prioritised, Guevara visited the Centre regularly over the weekends, working alongside those punished and discussing their sentences with them. When one of the founding members of the Department of Industrialisation, Francisco García Vals, known as 'Pancho', was sent to Guanahacabibes, Guevara visited every weekend to play chess with him and ensure that he understood the reprimand.¹⁰⁵

According to Arcos, no one ever chose to leave the ministry instead of going to Guanahacabibes, and in fact, 'many people got confused and thought this was part of a test to see if they were revolutionary. Just like when someone goes up Pico Turquino [the highest point in Cuba, involving a tough hike to get to the top] three times, so someone else climbs up five times.'¹⁰⁶ It was part of the notion that steel is forged in fire and that tough conditions and sacrifice for the Cuban nation and the Revolution made for stronger compañeros.

As branch director, Arcos took his enterprise directors and their deputies to Guanahacabibes on a weekend team-building exercise. They carried out manual work, spoke one to one with those under sentence, and afterwards went to the beach.¹⁰⁷

Velázquez, who was sent to Cayo Largo, and Manuel Marzoa, who was sent to Guanahacabibes, returned to MININD management roles free from stigma and without being ostracised. Velázquez said those who worked with Guevara were revolutionaries who accepted that he was demanding: 'it was a moral sanction. Once it was completed you returned to your work vindicated.'¹⁰⁸ Sánchez said people went with dignity: 'because to go there was to pay for your mistake and when you returned to the ministry it was an opportunity to rectify that error'.¹⁰⁹ Puñales said: 'if Che told us to go to Guanahacabibes, we went satisfied, content, and happy and returned to our post of work. This reflects the faith that we had in him as a leader.'¹¹⁰

The history of Guanahacabibes as a 'rehabilitation centre', and one involving hard labour, presents a conceptual challenge, raising the spectre of the harsh reality of such camps in other socialist bloc countries. However, the voluntary character of the sentence at Guanahacabibes lends weight to Guevara's claim that it was not a feudal sanction but one of a complex of policies designed to raise managers' consciousness by linking their individual interest with the enterprise's progress and national development as a whole. In other words, Guanahacabibes was one of the mechanisms implemented to forge the concept of work as a social duty.

The Recuperation Centre at San Miguel de los Baños

San Miguel de los Baños in Matanzas province was a holiday resort set around hot springs. The Hotel San Miguel and Hotel Villa Verde passed into the jurisdiction of MININD. Guevara proposed they remain as hotels, not for paying guests but for workers who were 'burned out' and were sent there to recuperate.¹¹¹ San Miguel de los Baños, then, was not a moral incentive, a lever to action such as socialist emulation and voluntary labour, neither was it a moral disincentive, like Guanahacabibes. However, it was one of the elements within the BFS which placed human beings at the centre of production and socialist construction. Cueto Álvarez said: 'Che regarded this provision as essential, he personally authorised who was sent there. He didn't leave this job to anyone.'¹¹²

Workers were proposed for rest and recuperation by the management of the EC they worked under. They were given between three and six months there, and longer if necessary; all paid for by MININD. In some cases their partners accompanied them.¹¹³ Capitalism is concerned with the worker's labour power;

socialism, on the other hand, must be concerned with their wellbeing. To this end, Guevara dedicated ministry time and resources to take care of workers.

Guevara was convinced that consciousness, the subjective element, could become such a powerful force that it could materialise in objective reality. This belief was key to the *foco* theory of struggle, whereby the guerrilla group forms a vanguard which can complete the prerequisites for revolution.¹¹⁴ It is also evident in his reference to the 'spirit of October'. However, when the mass was disaggregated to the level of the individual more delicate tools were needed to assess the state of consciousness. That was the role which Guevara assigned to psychology, a science which he embedded into the structure of MININD. Evaluating individuals was particularly important given that a handful of *compañeros* took on immense responsibilities and workloads. Such pressure occasionally proved to be overwhelming – to the detriment of the individual and the ministry. In this sense MININD's psychologists served as a preventive measure, analysing the capacity of individuals before they were exposed to such intense stress.

PSYCHOLOGY

By the mid twentieth century, psychology and psychiatry had penetrated intellectual circles in Argentinian far deeper than in any other Latin American country, particularly within the medical profession.¹¹⁵ Having graduated as a medical doctor in Argentina in 1953, Guevara's interest in psychology was arguably influenced by his Argentinian roots, rather than by its use in other socialist countries. Alberto Granado, his childhood friend and travelling companion, confirmed that Guevara was reading Freud at the age of 14.¹¹⁶ Borrego speculated that Guevara's concern for psychology was influenced by his medical training, and added that 'Che combined the psycho-social element a lot in management.'¹¹⁷ Norma Marrera, a psychologist who worked in MININD, argued that Guevara's interest in psychology was logical:

He was an intelligent person, with an enormous cultural vision, with many experiences of the world and, what's more, from Argentina, a country where they work a lot on psychology. He understood that psychology was a tool for understanding the workers better, to achieve the definitive goal – that workers feel better, to create better conditions at work. Psychology was a technique with many elements which could achieve labour stability, create leaders and give inexperienced leaders techniques, a methodology, to assist them. This was the objective.¹¹⁸

At dawn on 3 January 1959, Guevara's troops had taken control of La Cabaña military fortress in Havana. Within days, a literacy school was set up

for the Rebel Army soldiers. Guevara also invited pedagogical psychologists, philosophers and other social science professionals, according to the psychologist Nury Cao, to 'investigate the psychological and intellectual characteristics of the rebels in his column with the aim of figuring out or categorising these people and determining their level of development, in the educational and labour spheres'.¹¹⁹ These professionals became the Psychology Group which, in November 1959, was integrated into the Department of Training in INRA.

The protagonists were three Cubans: Dr Graciela del Cueto and Dr Gustavo Torroella, both pedagogical psychologists, and Commander Humberto Castello, a psychiatrist and combatant in the Revolutionary Directorate.¹²⁰ Initially their work involved devising and applying psychometric tests to assess candidates for study scholarships abroad, to ensure that they had enough commitment to carry through their studies for months or years, far from home, mainly in the socialist bloc, with vastly different cultures, languages and climates.

In February 1961, this group was integrated into MININD as the Section of Psychology. In 1963, the Section became the Psychology Department, first within the Office of Personnel, directed by Arcos, before being transferred to the Training Department within the Vice Ministry of Technical Development, led by Tirso Sáenz. They continued to employ psychometric tests to assess candidates for studying abroad, and similar tests were applied to current and perspective employees for administrative positions in the ministry – factory administrators, EC directors, ministry directors, vice ministers and the minister. The tests assessed motivation for study, communication skills, imagination and creativity. Given the frenzy with which administrators had been nominated during the nationalisations and the exodus of management and technical personnel, this also served as a retrospective evaluation of the new leadership. In addition, the Department advised these managers on leadership and communication skills.

Dr del Cueto headed this work and applied the tests with a group of three helpers.¹²¹ Nury Cao joined MININD in 1963 as a special assistant to Dr del Cueto: 'The main tasks I was personally involved with were linked to evaluation, diagnosis and guidance for the ministry personnel, management cadre, candidates for scholarships to study abroad or in Cuba, technical cadre, innovators, and so on.'¹²² The team assessed workers proposed as students for MININD's School for Administrators, which had an entrance requirement of sixth-grade level of attainment and involved an intensive one-year course. EC directors had sent barely literate workers with just second-grade level of attainment to study at the school, and they just could not cope. Guevara told them del Cueto complained that this revealed 'a tendency to consider man as a number'.¹²³ Enrolment at the School came to depend on del Cueto's approval, confirming that the candidate could deal with the pressure of the course.

In October 1963, Guevara explained that del Cueto had categorised as 'super-gifted' a group of young workers who lacked sixth-grade qualifications but were sharp, intelligent and curious. A new school would be set up for them, he said, with the intention of speeding them along to sixth grade and on to pre-university level as quickly as possible. 'Here the famous psychoanalysis, which is so condemned, is playing its role', said Guevara sardonically, adding: 'you all know who the intelligent youngsters are; they are truly interested, aware of everything'.¹²⁴ The purpose of this fast-track education was to create specialists to accelerate the development of the productive forces. Psychology was being applied in the interests of economic development.

Guevara and rest of the MININD's management council regularly took the psychometric tests. Borrego explained that this was another way of leading by example,

and demystifying the application of this method, because in that period there was a certain reticence from some leaders in the country. [In MININD] the use of psychological tests was considered to be an important aspect, but not definitive, in the selection of the directors; however, when the diagnosis of the psychologists revealed specific conditions that clearly limited the suitability of the cadre, these results were respected to the extent that the designation did not take place at all, even when the other people who knew them insisted on the nomination.¹²⁵

Arcos professed to be among those who were generally sceptical about psychology, which was particularly problematic given that, as head of personnel, he was in responsible for the Department of Psychology. When Arcos himself had taken the psychometric test he defiantly carried out the instructions given him in reverse. He recalled: 'But incredibly, when I finished, del Cueto did an analysis of my personality which was so perfect that I was shocked.'¹²⁶ When the tests revealed 'weaknesses' inconsistent with the paradigm of revolutionary leader, compañeros could still take up the new management positions, but were encouraged to strengthen their character through that work. José Luis Puñales' psychometric test concluded that he was *autosuficiente* (smug or arrogant): 'I worked to eliminate this problem', he said.¹²⁷ Borroto recorded that very few cadre were not approved for the management jobs as a result of these evaluations: 'If the cadre had limitations their superiors were informed in order to assist them to deal with this.'¹²⁸ Nonetheless, Borrego stated that in exceptional cases what the psychometric tests revealed about management candidates was vitally important:

We had schizophrenic people, with all sorts of problems. If they hadn't seen the psychologist they would have caused havoc. You can't put people with serious

problems to manage a factory. There were people who appeared normal but they had their cables crossed, they made tremendous speeches but they were insane ... We went through this test every three to four months. You think you're fine but the stress is killing you. People have to be able to rest. I remember a *compañero*, an extraordinarily good guy who, because of the lack of cadre and because he was extremely talented and worked hard, at one point was leading three sectors of industry. One morning his wife rang me at home and said he was in the shower with his military uniform on. I spoke to him and he told me he was a rabbit! He was completely burnt out – he spent six months in hospital.¹²⁹

The capacity to cope with stress, sleeping little and handling huge responsibilities, varied between individuals and the psychometric tests were believed to help assess that capacity. Guevara visited the Psychology Department regularly, discussed the results of his own tests with del Cueto and took on her analyses to improve his own management and communication skills. Cao recalled one occasion when he was deeply concerned because a young *compañero* he had told off had attempted suicide. Several members of the young man's family had been brutally murdered by Batista's army during a three-day massacre at Mina del Frío in December 1956. Cao explained:

The lad had been traumatised by what had happened to his family. But Che was worried that the way he had spoken to the lad had driven him to do this. Fortunately, nothing serious happened to the young man. Not everyone had the ability to understand Che's [demanding] attitude. These anecdotes show the sense of responsibility that Che felt with regard to human reactions and emotions. He got a lot of support from psychology to be a better leader and to have better human relations with his *compañeros*.¹³⁰

Guevara once spoke candidly in MININD's bimonthly management meeting about his own explosive character – a deficiency which he said had even been recognised within the government's Council of Ministers: 'I don't have just have an explosive character when dealing with people who are hierarchically below me, I am explosive. It is a defect that I am correcting within the Revolution, but it is not easy to correct.'¹³¹ Guevara was emphasising the dialectic of self-transformation through social development – an anti-dogmatic view that human beings are capable of changing and improving through experience and education. Revolution was a process which transformed people's psyche.

Guevara pointed out that under capitalism industrial psychology was applied to find tools to make workers more productive and more engaged at work. He was discussing how to strengthen the link between the leaders and the masses: 'We have Dr del Cueto here precisely to attempt to advance this as

much as possible.’ However, he complained that she had worked in the face of indifference and distrust, sometimes of a philosophical nature:

because there were false Marxist concepts and haggard old dogmatisms that men are equal, that you cannot measure the intelligence or character of man, etc. On the other hand, sometimes this is also because people don’t like to have the corners of their mind probed ... However, this is a science that is developing, that the capitalists use coldly, they value it in pesos and centavos.¹³²

Guevara integrated the psychologists with other elements of MININD’s apparatus – particularly the Department of Supervision. Psychologists gave guidance to the inspectors, investigators and auditors whose reports were also consulted in evaluating candidates for management positions.¹³³ So, in addition to the psychometric tests, candidates were observed at work and their colleagues were interviewed to provide an integral assessment. Borroto explained:

Two investigators carried out an investigation of the cadre going back ten years. Two inspectors did a functional inspection to witness the cadre’s leadership, how he gave orders. Two auditors worked with the cadre for two weeks to see their approach to economic and political work. Afterwards they summarised the results of that work, explaining their conclusions and finally I did the report.¹³⁴

Administrators and directors nominated in the frenzy of nationalisations caused little disruption to production by anything other than their incompetence. Nonetheless, as the Revolution consolidated and radicalised, individuals could become disaffected or be recruited by the counter-revolution, which was increasingly organised and coordinated with US government support. Mercenaries and dissidents employed industrial sabotage and outright terrorism to destroy the island’s productive base and sow fear in the attempt to undermine support for the Revolution. Stringent evaluations of cadre’s track records and mental state provided protection from saboteurs who might attempt to infiltrate the administrative structures. The rigorous selection process implemented by 1964 also shows that MININD was increasingly able to be more demanding about the technical and leadership skills of candidates. Standards and expectations were rising.

Social psychology of work

When Che was Minister of Industries we began the social psychology of work, concerned directly with the workers, not from the point of view of the psyche, but to

create better conditions so they would feel linked to their work and be more efficient, with more knowledge about what they produced and better self-esteem.¹³⁵

The Section for the Social Psychology of Work was set up within the Department of Psychology in 1964 and headed by an Argentinian psychologist Raquel Hoffman. She had arrived in Cuba offering to help the Revolution and was introduced to her compatriot Guevara by INRA President Carlos Rafael Rodríguez. The Faculty of Psychology, which had been set up in the University of Havana in 1962, was asked to choose three students to join the new Section. Norma Marrera, Nerada González and Nancy Zamarra were selected because they were interested in this area, as opposed to clinical psychology, and they were members of the UJC.¹³⁶ Their task was to visit MININD production units around the country to observe, assess and make recommendations on improving workers' conditions and relations with managers. They also gave psychology classes to cadre, teaching them about methods of leadership, communication and motivating workers. Marrera described their projects:

Our work was in the factories, in the enterprises, working directly with the workers, observing their working conditions. We didn't apply tests. We did investigations. We didn't just go to where there were problems. In some places we investigated an area of the institution that was of interest. Also, a factory could request our help in understanding a situation, for example, between a leader and his subordinates. In some places they wanted to investigate the cause of rapid labour turnover. We assessed the material conditions, the colour, the climate, everything.¹³⁷

During the visits they interviewed workers, carried out 'operative groups' – group discussions, and participated in management council and trade union meetings at the workplace under investigation. The survey had no time limit but usually took between one and three months, during which time they lived on site when the factories were outside of Havana, eating in the cafeteria and sharing the facilities. They observed everything from the floor level, including dawn or night-time work shifts. After the period of investigation they produced a report evaluating problems and making recommendations. Marrera said their proposals could include better food, more attention to workers' social and personal problems, ensuring work tools were in good condition, providing work clothes and boots for technical jobs, setting up a library and an area to relax:

Most of our suggestions were material, but they were difficult to meet because the country's economic conditions were bad. Sometimes the painting was too dark, so they had to repaint it, or put out flowers, find a radio, or create conditions for

workers to sleep or for entertainment, to create social circles to entertain employees and their families.¹³⁸

Having submitted the recommendations, the psychologists returned to appraise if the situation had improved. Sometimes the workplace asked them to return. Guevara was kept informed about these evaluations. Marrera said: 'Compañera Raquel [Hoffman] informed us that the ministry leaders were always very receptive to the suggestions that we made and would follow them wherever possible. Raquel participated in Management Council meetings and kept us informed.'¹³⁹

The Section for the Psychology of Social Work contributed to the curriculum at MININD's School for Administrators and School for Directors, giving classes in psychology. This was further formalised in the *Manual for Factory Administrators*, which illustrated Guevara's desire to introduce a layman's understanding of psychology in the ministry. Under a section titled 'Characteristics Required in the Administrator', listing 32 personal qualities that the administrator should cultivate, was:

To have absolute control of your character, voice and gestures at every moment and especially during discussions or delicate situations ... Always be sincere, be that in praise, reprimand or recommendations. Remember that all mankind, regardless of their educational level, have the innate ability to detect insincerity quickly and nothing so easily accounts for the loss of moral respect of others then to be categorised as insincere.¹⁴⁰

Marrera's work in this field began in 1964, by which time the majority of the ideological or class-conscious opponents to socialism had left the island or joined insurgency groups in the mountains. She believed that the student workers enjoyed the psychology lessons and that the working class accepted the psychology projects as one of numerous initiatives introduced by a Revolution which they were confident would bring a better future: 'They didn't have knowledge about creating socialism, because at that time communism was a taboo, but they realised that the Revolution was permanent, that their homes were theirs, that they were treated better at work and everywhere, so consciousness was growing deeper every day.' Marrera recognised that there were individuals who were not 'revolutionaries', but said she never encountered any serious problem in her work which could be a potential obstacle to the construction of socialism. The majority of the Cuban people were enthusiastic about pushing the Revolution forward, although domestic and external threats remained:

At any moment we could have taken to the streets to demonstrate that we were prepared to defend the Revolution. 1961 was Playa Giron, 1962 the October missile crisis, then the struggle against bandits [in the mountains]. Workers kept their militia uniforms ready. There was immense tension over when we would be attacked again and the militia was very important in all the work centres.¹⁴¹

The commitment to defend the country's sovereignty and the socialist Revolution, which had improved workers' lives materially and spiritually, nurtured consciousness and willingness to sacrifice.

Several major socio-psychological projects were carried out in MININD and, after its creation in 1964, in MINAZ, attempting to assess the general level of consciousness and its impact on production. Borrego recognised that while Guevara made constant use of the instruments of psychology, 'arriving at measurements of the effect of consciousness on production is difficult'.¹⁴² In 1963, every employee in MININD's headquarters – around 1,000 – completed a questionnaire on the same day at the same time. Still a student in the Faculty of Psychology at that time, Marrera participated in the project with other second-year students. She explained: 'It was a very full questionnaire including questions to measure workers' satisfaction, sense of purpose and work relationships. For example, they were asked to state the three most significant characteristics of their immediate boss and superior boss, their qualities and their deficiencies. It asked what needs they had, the quality of the food, and so on.'¹⁴³ Most questions involved tick boxes, but others required written replies. The analysis was carried out by the psychologists at the University, not those in MININD.

Borrego structured the new MINAZ to operate under the BFS, which included embedding the psychology tools which Guevara had promoted. In 1965, the Faculty of Psychology collaborated with MINAZ on a similar project to assess the morale of every worker in that huge ministry. Given the scale of the project, students from the philosophy and history faculties at Havana University helped by going to every sugar mill and work centre in the industry with questionnaires to assess the state of consciousness and attitudes of all the workers, from cane cutters to engineers and mill architects. Borrego described it as 'a laborious investigation of great scientific value from the sociological perspective ... In the parameters of measurement in the inquiry was found: the standing, prestige, recognition and popularity of all the leaders of the institution in the eyes of its workers.'¹⁴⁴ Marrera was involved in the project, which took about one month to complete: 'It was a sector which I didn't know, and it was interesting to see how it worked. It was a very hard job, with tough conditions, very interesting work.'¹⁴⁵

Following the compilation and analysis, measures were taken to improve workers' morale and subsequently increase productivity. The investigation was repeated two years later and Borrego confirmed that the results from the second investigation showed a marked improvement in terms of consciousness and morale.¹⁴⁶ By this time Guevara was no longer in Cuba. The three volumes of results were sent to the Central Committee of the Cuban Communist Party, where Armando Hart, Minister of Education until 1965, was particularly interested in the project.¹⁴⁷

As with much of the apparatus created by Guevara under the BFS, psychology was underexploited following his departure from Cuba in 1965. According to Marrera, Hoffman returned to Argentina, while she and her colleagues found employment as psychologists elsewhere – particularly with *compañeros* who had worked with Guevara in MININD.¹⁴⁸ In the 1980s, new projects emerged to study the link between consciousness and production using psychology tools. Set up in October 1983, the Centre for Psychological and Sociological Research (*Centro de Investigaciones Psicológicas y Sociológicas*) carried out projects to assess the relationship between workers' values, their sense of belonging and ownership of Cuban society. Marrera concluded that, years later, 'many institutions became interested in the psychology of social work ... organisations of the masses like the Union of Young Communists and the Federation of Cuban Women began to integrate psychologists into their social assistance tasks'.¹⁴⁹ There may not be strong or direct links between this and the apparatus Guevara set up as part of this BFS in the early 1960s, but the impulse and impetus which Guevara gave to psychology, whilst almost unheard of, is unquestionable. His premise was that human beings must be at the centre of the productive system under socialism.

CONCLUSION

Without boasting, I think we can already say that for the first time in the world we have established a Marxist, socialist system, that is congruent, or approximately congruent, with one that puts mankind at the centre, that speaks about the individual, that speaks about man and his importance as the essential factor in the Revolution.

Che Guevara¹⁵⁰

Guevara's concept of consciousness as social conscience meant a commitment to the social and economic justice aims of the Revolution, the conscious integration and participation of individuals in the project of socialist transition. His concern for consciousness evolved out of his interest in philosophy, a concern for the human condition, evident through his choice of a medical career and in his observations about the social conditions he experienced travelling

through Latin America in the 1950s. Human beings were central to his vision of history and social development. Like Marx, he was interested not only in the historical development of modes of production, but also their impact on human beings as the key to production.

Under the capitalist mode of production, human consciousness was characterised by alienation and antagonism – alienation from production, the product of mankind's impact on nature, and antagonism as class division, the relationships of production which divided society into the exploited and exploiting classes. For Guevara, the challenge was to replace alienation and antagonism with integration and solidarity, developing a collective attitude to production and the concept of work as a social duty. Socialism was a method of economic organisation in which production was consciously planned by workers in the interests of the majority. As socialist consciousness developed and workers took increasing control of production, they would value increases in production and productivity, not in terms of personal gain or profit, but as increasing the benefits for society. Work would evolve from a social duty into a social pleasure. He criticised the lack of emphasis on consciousness and education in existing socialism, arguing that new attitudes and values must be created simultaneously with the productive forces. Guevara was in a position to concretise these ideas by formulating policies as Minister of Industries. This involved a process of searching and experimentation. Ideas were developed in a dynamic environment, often emerging spontaneously from workers and managers devising *ad hoc* solutions to concrete problems.

The key to raising productivity and efficiency was in the incentive system. While material incentives were a regretful necessity in the earliest stages of transition, they would be increasingly replaced by moral incentives – implemented via socialist emulation and voluntary labour. The Rehabilitation Centre at Guanahacabibes was an example of a moral disincentive, and San Miguel de los Baños was an affirmation of the need to care for the human beings on whom production depends.

Psychology was a tool for measuring consciousness at the level of the individual. It was also a mechanism for evaluating the ability to cope with the stress of important responsibilities and to lead by example. This was particularly important given the scarcity of personnel with management abilities. Psychology had a pedagogical function, assisting individuals to become better leaders, improving the link between managers and workers, raising workers' productivity by improving their conditions and sense of ownership of the means of production. Additionally, psychology assessments could also serve as a safeguard against saboteurs. Both consciousness and psychology, elements which Guevara embedded in MININD as part of the BFS, remain vitally important in Cuba today.

9

Critique of the Soviet *Manual of Political Economy*

Ernesto ‘Che’ Guevara arrived in Cuba as a revolutionary medic. Within nine years he had become a military commander, a political leader, an industrialist, a banker, a minister, an economist, a diplomat and a national hero in a foreign land. As a member of the Cuban government for five years, Guevara had helped to construct the scaffolding of a new society. Despite the ostensible and public break from the Cuban Revolution with his departure in 1965, he remained intimately tied to both the Revolution and the theoretical challenge it embodied.¹ Between 1965 and 1966, he made his most important contribution to socialist theory with his critical notes on the Soviet *Manual of Political Economy*.² The notes were smuggled back into Cuba by Aleida March, Guevara’s wife who went on a clandestine visit to see him overseas and who passed them on to Orlando Borrego Díaz, Guevara’s young deputy since La Cabaña in January 1959. For 40 years Borrego kept them under lock and key, out of sight of scholars, political leaders, historians and *compañeros* alike. What was it about these notes which made them so contentious or controversial that it was necessary to deprive the world of their contents for four decades?

The notes were the start of an ambitious project to write a *Manual of Political Economy* for Cuba. By 1966 Guevara had sufficient conviction in his theoretical analysis and confidence in his alternative economic management system to initiate a project which would challenge the very status of the Soviet *Manual of Political Economy* and the position of the Soviet Union as the guiding light of the socialist world. Had Guevara completed his seminal work, it would have been by implication a major challenge to the Soviet Union’s authority, offering an alternative model of transition for socialist countries and emerging revolutions. There is remarkable consistency between the arguments Guevara developed once he had left Cuba and his theoretical positions expounded in the Great Debate and concretised in the Budgetary Finance System (BFS). Rather

than changing, his ideas strengthened following the practical experience of implementing the BFS in the Ministry of Industries (MININD).

Guevara's theoretical polemics had been widely disseminated during the Great Debate and his experimentation with the BFS was also open to scrutiny and emulation inside Cuba and outside. While he was granted free reign to put his ideas into practice within MININD, there was also clearly a need for sensitivity to the *realpolitik* of relations between the USSR and Cuba. Guevara openly opposed the Soviet economic management system, but he did not publicly articulate his conviction that the Auto-Financing System (AFS) threatened to reintroduce capitalism in the socialist countries. He recognised that he could not speak as an individual: his total integration into the Revolution's leadership, the autonomy he was granted to develop the BFS and his diplomatic responsibilities in representing Cuba around the world, all meant that his own analysis could be mistaken for an official government position. His scientific rigour and candour compelled him to analyse and search for solutions, but he was also careful not to jeopardise fraternal relations or the crucial financial and political assistance which Cuba received from the Soviet bloc.

Guevara recognised the value of Soviet assistance and had great respect for the feats of USSR. It is vitally important to understand that his criticisms were intended to be constructive. Guevara believed that, by carrying out a thorough critique of the AFS, he would be able incontrovertibly to highlight the dangers inherent in an 'hybrid' system: socialism with capitalist elements. Ultimately, he aspired to convince the other socialist countries to reverse the prevailing trend towards 'market socialism'. He compared them to an aeroplane that was lost but, instead of returning to find the correct path, continued on its journey.³ Guevara hoped that his theoretical critique, backed up by the practical experiences of implementing the BFS in Cuba, would convince the socialist countries to correct their mistakes. His critique of the Soviet *Manual* would consolidate these efforts.

In some ways what most irritated Guevara was the absence of a forum for international debate on the political economy of transition to socialism. By the early 1960s, the Sino-Soviet split formed a vociferous backdrop which reverberated through communist parties around the world, not least in Latin America, compounding existing divisions between so-called Trotskyists and Stalinists. Within Cuba, debate and comparative experimentation had been encouraged. But outside Cuba, Guevara's critical analysis had led to accusations that he was variously a revisionist, a Trotskyist and a Maoist, name-calling which he regarded as dangerous politicking, machinations aimed to disrupt the tenuous fraternity of socialist countries and censure debate. One of the most annoying sources of these accusations was from Trotskyists who tried

to compare his analysis with Trotsky's criticisms. Distancing himself from Trotskyism, Guevara said:

There are some useful things that can be taken from Trotsky's ideas. I believe that the fundamental things which Trotsky based himself on were erroneous, and that his later behaviour was wrong and even obscure in the final period. The Trotskyists have contributed nothing to the revolutionary movement anywhere and where they did most, which was in Peru, they ultimately failed because their methods were bad. That comrade Hugo Blanco, personally a man of great sacrifice, based [his position] on a set of erroneous ideas and will necessarily fail.⁴

On the other hand, Guevara recognised that 'In many aspects I have expressed opinions that could be closer to the Chinese side: guerrilla warfare, people's war, in the development of all these things, voluntary labour, to be against direct material incentives as a lever, a whole set of things which the Chinese also raise ...'.⁵ Consequently, explained Guevara, he was accused of factionalism, in an environment in which competing interpretations had become a bitter and violent fight resulting in the refusal to recognise different opinions: 'We no longer discuss the Budgetary Finance System [with the Soviets]. What's more, I represent the government when I travel and I am disciplined and strictly represent the opinion of the government. So they would have to call the government Trotskyist, which is impossible.'⁶ The political situation was indeed delicate.

For Guevara it was imperative to initiate a serious study of the political economy of the transition to socialism, without the political machinations: 'It is not possible to destroy opinions with beatings – that is precisely what kills all development, the free development of intelligence.'⁷ The more people involved in collective debate the more comprehensive and solid would be the theory which emerged. He appealed to MININD directors to take up this challenge: 'Then we need to help ourselves, you should help more, think more, collaborate, read all the fundamental texts that are within everyone's reach.'⁸ Study and analysis were essential to facilitate the resurgence of creative and dialectical Marxism to shatter the dogmatic and mechanistic approach in the USSR, which had turned the *Manual*, not Marx's *Capital*, into the Bible.⁹ He explained: 'The theory is failing because they have forgotten that Marx existed and the whole previous epoch and they base themselves on nothing more than Lenin; we should say on one part of Lenin, from 1920 onwards, which are just a few of his years, because Lenin lived many years and studied a great deal.'¹⁰ The allusion to Lenin from 1920 onwards is a reference to the implementation of the New Economic Policy (NEP), introduced in the USSR as a practical solution to concrete problems and openly articulated by Lenin

to be a major concession to capitalist mechanisms and a step backwards for socialist construction.

On the eve of his departure from Cuba, in April 1965, Guevara wrote a letter to Fidel Castro outlining his concerns and discrepancies with the Soviet political economy. Summarised below, the letter has the tone of a leaving speech, explaining why he had felt it necessary to develop the BFS: its aims, an evaluation of its strengths and weaknesses, a call to others to keep up the good work. He started by pointing out that in the *Critique of the Gotha Programme*, Marx had described socialism as a period in which a series of commodity categories were suppressed because society, which was fully developed, had passed into a new stage. Later, Lenin contributed his theory of unequal development and the possibility of breaking the weakest link in the imperialist chain. The vindication of this theory with the Bolshevik Revolution in the Soviet Union had imposed an additional stage – the period of transition to socialism. While the Soviets and the Czechs claimed to have passed this first stage, in Guevara's view that was objectively false because of the continued existence of private property in both countries. The mistake, said Guevara, was that a new political economy had not yet been completed, nor had the process been studied. Consequently the workings of the USSR had been presented as the presumed laws of socialist society.

Guevara recognised that Lenin, forced by circumstances from 1921 until just before his death, had taken measures which led to the NEP and recreated capitalist relations of production throughout the country – a stage which he called 'state capitalism'. In reality this could also be called 'pre-monopoly capitalism' as far as the classification of economic relations is concerned. Lenin, in the last period of his life criticised payments and profits made between enterprises. Guevara wrote: 'Although it is completely subjective, it gives me the impression that if Lenin had lived to lead the process of which he was the principal actor and which was completely in his hands, he would have rapidly introduced changes to the relations established by the New Economic Policy.'¹¹

Guevara argued that the entire legal-economic scaffolding of contemporary Soviet society originated from the NEP, with its pre-monopoly capitalist relations and categories. Czarist Russia possessed only isolated factories and independent units, lacking the management techniques and concentration of the big trusts. Socialism limits the possibilities of development through capitalist competition, but the Soviets had neither liquidated capitalist categories nor replaced them with new categories of a higher character: 'Individual material interest was the arm of capital par excellence and today it is elevated as a lever of development, but it is limited by the existence of a society where exploitation is not permitted. In these conditions, man neither

develops his fabulous productive capacities, nor does he develop himself as the conscious builder of a new society.¹² Efforts to increase production were focused on the individual, hence the importance given to material incentives as the principal motor.

Guevara pointed out that the law of value did not operate freely because of the absence of a free market and because of the need to provide certain products to the population at given prices, with profit rates averaged out across the production units. Its revolutionising effect on production under capitalism was lost. Soviet technology was stagnant relative to the US in most economic sectors because the mechanisms which they devised to replace the capitalist market were fossilised and led to technological imbalance. With no substitute for competition, technology had stopped driving social development. The exception, Guevara pointed out, was in the defence sector where the norms of profit do not operate. The Soviets lacked the integration which exists in capitalist countries between the defence sector and production sector, where military technology gains are incorporated into the civilian production, significantly increasing the quality of consumption goods. Guevara wrote:

These errors, excusable in Soviet society, the first to initiate the experiment, have been transplanted to more developed or simply different societies, leading to a dead end and provoking reactions in the other states. The first to revolt was Yugoslavia, then Poland followed and similarly now Germany and Czechoslovakia ... Now what happens? They turn against the system but no one has looked for the root of the problem; they attribute it to the curse of bureaucracy, excessive centralisation of the apparatus ... the most effective units of production clamour for their independence. This is strikingly similar to the struggle of capitalists against the bourgeois state that controls specific activities.¹³

The law of value increasingly becomes the measure of efficiency, so the economy is adjusted in relation to the efficiency of various sectors. Factories are closed and Yugoslav and Polish workers migrate to the expanding economies of western Europe: 'They are slaves that the socialist countries send as an offering to the technological development of Europe's Common Market.'¹⁴

The BFS, continued Guevara, combined the two fundamental lines which should be followed to reach communism: technology and consciousness. The possibility of entering communism could not be measured in income per capita, or average salary per worker.

Consciousness plus the production of material goods is communism. Fine, but what is production if not increasingly taking advantage of technology ... [which is] ... the result of an increasingly fabulous concentration of capitals, that is, the ever greater concentration of fixed capital or dead capital in relation to variable capital

or living labour. This phenomenon is produced in developed capitalism, imperialism. Imperialism has not perished because of its ability to extract profit, resources, from the dependent countries and by exporting conflicts, contradictions, thanks to the alliance with its working class against the rest of the dependant countries. The technological seeds of socialism are present in developed capitalism much more than in [the] so-called system of economic calculus [AFS] which is also the heir of a form of capitalism that has now been surpassed, but which, nonetheless, they have taken as a model for socialist development.¹⁵

The BFS, Guevara added, aspired to apply capitalist advances and therefore tended towards centralisation. 'In summary, to eliminate capitalist categories: commodity exchange between enterprises, bank interest, direct material interest as a lever, etc. and take the latest administrative and technological advances from capitalism, this is our aspiration ... We cannot have General Motors, which has more employees than all the workers of the whole Ministry of Industries, but we can have an organisation, and in fact we do have, similar to General Motors.'¹⁶

Under socialism, technology and administrative techniques have not developed simultaneously as they have under capitalism. As a consequence, said Guevara, when socialist countries had noted serious failings of administrative techniques, they had looked around and discovered capitalism. What the BFS had not yet achieved was the full integration of man with his work so that it no longer needed to use material disincentives; that is, 'How to ensure that every worker feels the vital necessity to help their revolution and at the same time feels that work is a pleasure, as we leaders feel.'¹⁷

Guevara admitted to the lack of worker participation in devising the plans, in enterprise administration, and so on, but he denied the claim by some critics of the BFS who concluded that this was because they lacked material interest in production: 'Their remedy for this is that the workers lead the factories and be monetarily responsible, they have incentives and disincentives in accordance with their management.'¹⁸ Guevara recognised that clearly one worker must lead the unit, but as a representative of all of them, not in antagonism to the state. Centralised planning must rationally use all elements of production and cannot be determined by one workers' assembly or on the opinion of one worker.

Practice had shown, Guevara added, that one technical cadre could have more impact on production than all the other workers, and that one management cadre could totally change a factory, for better or worse. How was it possible for one administrator to involve and enthuse the rest of the workers? He said: 'We have not yet found the answer and I believe it needs to be studied further. The answer has to be closely linked with the

political economy of this period and the treatment of these questions should be integral and coherent with political economy.¹⁹ Guevara set himself the task of investigating these questions.

CRITIQUE OF THE SOVIET MANUAL OF POLITICAL ECONOMY

After the Congo, Che began a critique of the Soviet *Manual of Political Economy* and predicted 20 years ahead that the Soviet Union was going to return to capitalism. This demonstrates his genius; without being an economic scientist, or a brilliant economist he was capable of getting to the root of the problem. He based himself on Marxist theory. What the USSR was doing was taking them away from Marx and Engels' conceptions about the construction of socialism. He was capable of getting to the root of the issue because he was so studious.

Edison Velázquez²⁰

Guevara drafted a plan for his ambitious and comprehensive work, to begin with a biography of Marx and Engels, which was completed, and an explanation of their method.²¹ This would be followed by an overview of pre-capitalist, capitalist and imperialist modes of production. He then aimed to deal with the period of transition to socialism and finally the problems of socialism. The topic coverage was so comprehensive that, even given Guevara's talent for being concise, the completed work would have rivalled the Soviet *Manual of Political Economy* in size and scope.

In preparation for this work, Guevara took notes on the Soviet *Manual*. This practice was consistent with the methodological approach to study adopted since his teenage years. Many works of theory have taken the form of a critique of existing ideas, including Marx's *Capital*. Guevara's analysis of the operation of the law of value under socialism, the role of money, finance and banking under socialism and the use of incentives, all expounded in the Great Debate, were applied to the Soviet *Manual* and he expanded on additional themes dealt with fleetingly in MININD meetings. He continuously highlighted the deficiencies of Soviet theory and pointed out new areas where investigation was imperative.

However, it is vital to remember that these notes were not written for publication, nor brought together as text. They were comments written in response to specific paragraphs of the *Manual* – notes to himself, including indications of areas for further study.²² It would be disingenuous to present these private commentaries as a comprehensive critique, rather than the preliminary sketch of a more long-term study. Guevara demonstrated an awareness of the relative historicity of both the *Manual* and his own critique. Readers of the notes should do likewise.

Guevara's notes begin with an introduction explaining the need for such a critique. He described Marx's *Capital* as a monumental theoretical work and Lenin's extensive writings as an indispensable complement to the work of the founders of Marxism. However, the fountain of theory had dried up, he said, leaving only some isolated works of Stalin and certain writings of Mao Tse-Tung as witness to the immense creative power of Marxism: 'In his last years, Stalin feared the consequence of this lack of theory and he ordered a manual to be written which would be accessible to the masses and deal with all the themes of political economy up to the present period.' This *Manual* was changed with developments within the USSR.

In starting a critical study of it, we found so many concepts conflicting with our way of thinking that we have decided to initiate this venture – a book which will express our points of view – with the greatest scientific rigour possible and with maximum honesty. The latter is essential given that a sober study of Marxist theory and recent facts places us in the position of criticising the USSR, a position that has become the business of many opportunists who launch attacks from the extreme left to the benefit of reaction. We are determined not to hide any opinions for tactical reasons, but at the same time, draw conclusions that because of their logical rigour and broad perspective will help to resolve problems and will not raise questions without solutions.²³

The task was important, wrote Guevara, because Marxist economics was heading for dangerous defeats. The intransigent dogmatism of Stalin's epoch had been succeeded by inconsistent pragmatism, tragically in all aspects of life in the socialist republics.

In the course of our practice and our theoretical investigations we have discovered the most blameworthy individual with the name and surname: Vladimir Ilich Lenin. Such is the magnitude of our audacity. However, those who have the patience to continue to the final chapters of this work can appreciate the respect and admiration that we feel towards this 'guilty' person and towards the revolutionary motives for those acts whose final results would today shock their author ... Our thesis is that the changes brought about by the New Economic Policy (NEP) have saturated the life of the USSR and that they have since scarred this whole period. The results are disheartening: the capitalist superstructure was increasingly influencing the relations of production and the conflicts provoked by the hybridisation that was the NEP, are today being resolved in favour of the superstructure; it is returning to capitalism.²⁴

Highlighting the different economic and geographical conditions facing the Revolution in Cuba compared to the existing socialist countries, Guevara thus

called his work ‘a cry from underdevelopment’, revealing his intention ‘to give a certain universal value to our approach’.²⁵

Guevara predicted that some would be offended by the book, whilst others might see it as rabid anti-communism disguised as theoretical argument. But many, he hoped, would feel the breath of new ideas, explained, brought together and given backbone. This book, he concluded, was written for them and for the many Cuban students who go through the painful process of learning ‘eternal truths’ in publications, mainly from the USSR.

For those who view us with suspicion because of the esteem and loyalty they feel with respect to the socialist countries, we give them a single warning: the affirmation by Marx, in first pages of *Capital*, about the incapacity of bourgeois science to criticise itself, falling back on apologetics instead, can be applied today, disgracefully, in the science of Marxist economics. This book constitutes an attempt to return to the correct path and, independently of its scientific value, we are proud of having tried to do so from this small developing country. Humanity faces many shocks before its final liberation but – and we are completely convinced of this – it will never get there without a radical change in the strategy of the principal socialist powers.²⁶

For clarity, the following summary of Guevara’s critical analysis of the *Manual* has been organised into five themes: (1) capitalism and imperialism, (2) the Kolkhoz agricultural cooperatives in the USSR, (3) socialism, (4) class relations, and (5) international relations.

Capitalism and imperialism

Guevara complained that the *Manual* adopted a classical Marxist conception of class relations between the bourgeoisie and the working class, without considering the effects of imperialism. While the *Manual* argued that capitalists attack the standard of living of the working class who therefore resist, Guevara argued that, in the imperialist countries,

the tendency of modern imperialism is to share with the workers the crumbs of their exploitation of other peoples. On the other hand, the tendency to increase production demands an increase in consumption, that is only achieved in a stable way when making new articles form an essential part of the worker’s life, so they are part of the formation of the value of labour power (radio, television, cinema, domestic equipment, etc.).²⁷

Guevara repeated this point in relation to salaries, stating that Marx’s analysis of the tendency for salaries to fall is controversial: ‘It seem to me that this needs to be studied in three parts: the tendency of capitalism to lower the average salary; the need to increase the sale of products that tends to increase the

value of labour power; imperialism as a world system that tends to pauperise countries while sharing out crumbs to its working class.²⁸ The latter explains why 'the mass of workers in the imperialist countries have stopped being the vanguard of the world revolution'.²⁹ Guevara's principle concern here was the effect of imperialism on the working class in advanced capitalist countries. He pointed out that a large proportion of those workers achieve a higher standard of living at the expense of the poor in the exploited nations. He touched on the contentious issue of the dichotomy between the need to increase the consumption levels of sections of the working class and the general need to decrease the value of labour power globally.

Guevara was referring not just to the labour aristocracy, but to the whole working class within the imperialist countries who benefit from the imperialist exploitation and the technological progress of monopoly capitalism. In response to the Soviet *Manual's* assertion that capitalist machinery increases the intensity of work without increasing pay, Guevara added that the tendency of monopoly capitalism is towards automated production, where the machinery imposes the rhythm and there can be little variation to the work norm: 'The tendency of modern production makes man's work less physically demanding.'³⁰

Chapter 14 of the *Manual* deals with economic crises, claiming that capitalist crises demonstrate that the development of the productive forces of capitalism have surpassed bourgeois relations of production, which obstruct their further development. 'How is it possible to tell the history of crises going back two hundred years with a statement of this type?' questioned Guevara, adding that 'there is a crisis of growth that leads to the monopolistic concentration of capitals. The problem is that the meaning of the crisis has not been properly studied by Marx and [the Soviets] have continued with the generalities he expounded.'³¹

Guevara also pointed out that the result of the arms race had not been scientifically analysed, nor its relation to crises. Following the *Manual's* assertion that the arms race leads to an increase in workers' exploitation and monopoly profits, he stated that it decreases unemployment and creates a relative prosperity: 'I don't understand the mechanism well but it must be a short term phenomenon that inevitably leads to war or crisis. They say that war prevents the crisis. We would have to study the cycles to see if the crisis does not avoid the war (supposition subject to study).'³²

Finally, Guevara cautioned against Lenin's characterisation of imperialism as capitalism which was dying, not just monopolistic and parasitic. He said:

a middle aged man cannot undergo more physiological changes, but he is not dying. The capitalist system reaches its total maturity with imperialism, even then it has not fully exploited all of its possibilities in the current moment and it has great vitality.

It is more precise to say “mature” or to express that it has arrived at the limits of its ability to develop ... it’s not so close, the definitive day of revolution.³³

Guevara fully appreciated the enormity of the productive, military and political strength of capitalism. This reality could not be ignored in the aspirations to socialist transition. The power of the capitalist world provides the context for the struggle for socialism and it was recognition of this that made Guevara so adamant that transition from the capitalism to socialism was a process which had to be both conscious and violently forced.

Kolkhoz

The Kolkhoz was a form of collective farm established in the late 1920s in the Soviet Union, in which members of the farm, *kolkhoznics*, were paid a share of the farm’s product and profit according to the number of workdays they had invested. *Kolkhoznics* were entitled to hold an acre of private land and some animals, the product of which they owned privately.

Guevara had two principal points of contention in relation to the *Manual’s* formulation about the Kolkhoz. First, he insisted that the Kolkhoz system was ‘characteristic of the USSR, not of socialism’,³⁴ complaining that the *Manual* ‘regularly confuses the notion of socialism with what occurs in the USSR’.³⁵ Second, he argued that cooperatives are not a socialist form of ownership and that they impose a superstructure with capitalist property relations and economic levers.

The *Manual* states that the Kolkhoz are free from exploitation and antagonistic contradictions. Guevara refers to denunciations in the Soviet press of a Kolkhoz which contracted manpower for specific harvests, and questioned ‘whether this is considered to be an isolated case or if you can maintain this occasional exploitation of manpower within a socialist regime?’ For Guevara, the Kolkhoz structure itself created antagonism in the relations of production, because ‘the Kolkhoz system allows a form of property that necessarily clashes with the established regime, and even with its own Kolkhoz organisation, as the peasant tries to reduce his collective work to work for himself on his own production’.³⁶

Guevara cited Lenin’s statement that the peasants generate capitalism.³⁷ The *Manual* itself quotes Lenin that small production generates capitalism and the formation of a bourgeoisie, constantly, spontaneously and en masse.³⁸ However, Guevara concluded that the *Manual* is not able to deny that the cooperatives generate capitalism: ‘Although it has collective tendencies, it is a collective in contradiction to the big collective. If this is not a step towards more advanced forms, a capitalist superstructure will develop and come into contradiction with society.’³⁹ The ‘big collective’ is the nation and reflects

Guevara's view that under socialism, the means of production in different enterprises and sectors should be considered as elements of one big factory. There can be no commodity exchange between them, as there is no transferral of ownership, thus the law of value is undermined.

The *Manual* quotes Lenin: 'The regime of cooperative cultivation under social ownership of the means of production, under the triumph of proletariat over the bourgeoisie, is the socialist regime.'⁴⁰ Guevara stated that this was one of the greatest mistakes of socialism:

To begin with a semantic question: what is a cooperative? If it is considered as a grouping of producers, owners of their means of production, it is an advance in contrast to capitalism. But in socialism it is a setback, as it places these groupings in opposition to society's ownership of the other means of production. In the USSR the land is social property but not the other means of production that belong to the Kolkhoz, not to mention the small *kolkhoznic* properties which supply growing quantities of basic foodstuffs and deepen the gap between the society and the *kolkhoznics*, if not monetarily, then ideologically.⁴¹

According to Guevara, even if private property within the Kolkhoz was eliminated there would remain a contradiction between individual collective ownership and the social ownership of all the people.⁴² As evidence of this, the *Manual* outlines contradictions which arose between the Kolkhoz and the Machine and Tractor Stations (MTS), which lent equipment to the cooperatives. As monetary incomes of the *kolkhoznics* increased they were able to purchase tractors and other agricultural machinery, which created pressure on the MTS to sell technical equipment to the Kolkhoz. The MTS were consequently reorganised as repair centres for the equipment.⁴³ Guevara stated that: 'this is a palpable example of the antagonistic contradictions that emerge between social property and that of the individual collective. The MTS could have had many vices of bureaucracy, but the superstructure imposed its solution: greater autonomy and more of its own wealth.'⁴⁴ The superstructure was the Kolkhoz.

The Kolkhoz had fixed salaries for cooperative workers whose employment was guaranteed. In addition they received monthly bonuses – in money or in kind – according to their working days contributed. For Guevara, 'this, and the reasons pointed out as advantageous, indicates the backward character of the Kolkhoz system, a compromise solution by a state that constructed socialism alone and surrounded by dangers. The superstructure created gained strength with time.'⁴⁵ Guevara was extremely cognisant of the concrete conditions which made the implementation of the NEP, and consequent economic management systems, necessary. However, his concern was that these measures be openly

understood to be concessions to those problems, not paradigms for socialist transition. Noting that the Kolkhoz had differential incomes according to their size and productivity, Guevara commented: 'One has the right to ask oneself, why? Is it essential? The answer is: no.'⁴⁶ Guevara suggested that, 'perhaps, it would be better to consider the Kolkhoz as a pre-socialist category, of the first period of transition',⁴⁷ insisting that 'cooperative ownership is not a socialist form'.⁴⁸

For Guevara, the major challenge of socialist transition was precisely 'how to transform individualised collective property into social property'.⁴⁹ This was the crux of the problem and it was not being confronted in existing socialism. Without solving this contradiction, class antagonisms would remain, impeding the transition to communism, a classless society. The *Manual* describes the Kolkhoz peasants and the working class as two classes in socialist society with amicable relations, but different positions in social production. Guevara responded: 'if the Kolkhoz peasants are considered as a separate class it is because of the type of property they have; property that should not be considered as a characteristic of socialism but rather of Soviet society'.⁵⁰ The *Manual* concluded that 'the relations of production of the Kolkhoz cooperative form fully respond to the needs and the level of development of the current forces of production in the countryside. Not only have they not exhausted their possibilities, but they can serve for a long time during the development of the forces of production in agriculture.'⁵¹ But Guevara believed that a confrontation between this collective form and social ownership of the means of production was inevitable, and he warned that: 'when they clash (and it could be in the not too distant future) the superstructure will have the strength to demand more "freedom", that is to impose conditions; it is worth saying, to return to capitalist forms'.⁵²

In addition to his theoretical arguments about contradictions in property relations, Guevara also contested the Soviet's claim that 'the Kolkhoz system has demonstrated its indisputable superiority over capitalist agriculture', being the biggest and most mechanised in the world.⁵³ He pointed out that 'productivity is extraordinarily higher in North America, due to the investments carried out in agriculture'. In 1963, a domestic production crisis forced the USSR to purchase wheat at world market prices from the US. Referring to this fact, Guevara added that the Soviets' statement of superiority seemed like a mockery: 'after the enormous purchases of wheat, it is a joke or an attempt to cover up the truth with words'.⁵⁴

Guevara's position is clear: cooperative ownership and the Kolkhoz system generate a capitalistic superstructure which clashes with state ownership and socialist social relations, increasingly imposing its own logic over society. The

Kolkhoz system was progressive in relation to capitalist forms of ownership, but would also retard the development of socialist forms.

Socialism

The *Manual* seemingly contradicted itself on the question of the parliamentary road to socialism in the capitalist countries, first stating that a socialist economy ‘cannot arise in the entrails of bourgeois society, based on private property’, and then stating that ‘there is the real possibility that, in one or another of the capitalist countries or those coming out of colonial domination, the working class could arrive at power peacefully, through parliament’.⁵⁵ Guevara was dismissive: ‘This old story about parliament is not even believed by the Italians, who have no other god.’⁵⁶ For him, the transition from capitalism to socialism is never without struggle and he challenged the Soviets to prove the opposite.⁵⁷

With the socialist development of the economy, claimed the *Manual*, a fundamental economic law of socialism emerges: ‘Production is carried out ... to improve the material wellbeing and cultural level of the workers ... achieved by means of rapid and uninterrupted expansion of industry and full application of advanced technology.’⁵⁸ Guevara replied:

For me, this is the weakest point of the so-called socialist political economy. The fundamental law cited could be of a moral order, placing itself at the head of the political programme of the proletarian government, but never of an economic nature. On the other hand, what would this fundamental economic law be, if it did exist? I believe that if it does exist it should be considered to be planning as such. Planning should be understood as the first opportunity for humans to govern economic forces. This would mean that the fundamental economic law is that of interpreting and managing the economic laws of the period.⁵⁹

Guevara’s notes highlighted numerous economic laws of socialism cited in the *Manual*. He contested each law, serving to undermine the scientific claims of the *Manual*:

Manual law 1: The necessary correspondence between relations of production and the forces of production.

Guevara: This contradicts the *Manual*’s statement that countries without fully developed capitalism can reach socialism.⁶⁰

Manual law 2: Uninterrupted production – because production is free from crisis.

Guevara: This is idealist and recent problems in eastern Europe and the wheat crisis demonstrate that there can be serious interruptions in production. This

law is based on Stalin's claims that demand is below supply in the construction period. Khrushchev refuted this and was proven right. Although they have been caused by mistakes, there have been mitigated crises and stagnation in production.⁶¹

Manual law 3: Harmonic (proportional) development of the national economy.

Guevara: Correct, but vague, and does not define harmonic development. Investing in armaments obstructs development which prioritises the satisfaction of consumption goods and there are differences between development in autarkic countries and those using the proper international division of labour. This law is simply an element of planned development.⁶²

Manual law 4: Constantly rising worker productivity.

Guevara: This is an outrage. It is the tendency that has driven capitalism for centuries.⁶³ To set out to increase productivity by individual incentives is to fall lower than the capitalists. They do increase exploitation in this way, but it is technology that enables the great leaps in quality in relation to productivity.⁶⁴

Manual law 5: Socialist accumulation demands systematic investment of part of the national income in the increase of production funds.

Guevara: Another capitalist law dressed up differently.⁶⁵ No one can put goals of 'bread and onions' to reach communism; a determined (elastic) level of development of the productive forces with the new level of consciousness of the masses (and socialisation of the means of production) will reach communism.⁶⁶

Manual law 6: Distribution (remuneration) according to work done.

Guevara: Vague and inexact in relation to today's reality and begs the questions, how much work does a major general, a teacher, a minister or a worker invest? Lenin had a Marxist idea in *The State and Revolution*, to equalise the salaries of office and manual workers which he later gave up, probably incorrectly.⁶⁷ The salary scale which Guevara helped devise in Cuba in 1962–64 recognised some wage differential but moved towards the harmonisation of remuneration essential to undermine the operation of the law of value and decommodify labour power.

Manual law 7: Satisfaction of growing material needs of the people.

Guevara: They combine the ends, an ethical attitude, with the law and from which emerged this runt – the famous fundamental law.⁶⁸

Manual law 8: End of the antagonistic contradiction between accumulation and consumption.⁶⁹

Guevara: It might not be antagonistic, but the contradiction remains important and must be considered in the plan every year. Armaments play a big role in this contradiction.⁷⁰

According to the *Manual*, the masses compete to surpass the development plans. Guevara disputed that this had been achieved in the USSR or Cuba, or anywhere else. Planning was treated as a mechanical entity: 'it is forgotten that planning is the first stage of man's struggle to dominate matters. You could almost say that the idea of planning is a spiritual state conditioned by ownership of the means of production and consciousness of the possibility of directing things.'⁷¹ The *Manual* advocates the use of money and credit to assure investments for the completion of the production plan. Credit, profit and accumulation were used to overcome anti-planning tendencies, with the use of material incentives. Guevara argued the process should be reversed. The masses should participate in devising the Plan, but once finalised it should be completed as mechanically as possible with the process controlled by technology. He complained that the *Manual* does not conceptualise the plan as an economic decision of the masses, conscious of their role. Instead,

they give [the Plan] a placebo, where economic levers determine its success. This is mechanistic and anti-Marxist. The masses should have the opportunity to direct their destiny, resolve how much goes to accumulation, how much to consumption, the economic techniques should operate with these data and the consciousness of the masses assures its completion. The state acts over the individual that does not complete his class duty, penalising him, and awarding in the opposite case. These are educational factors that contribute to the transformation of man, as part of the larger educational system of socialism. It is the social duty of the individual that compels his behaviour in production not his stomach. Education attends to this.⁷²

Guevara added that annual plans are a hindrance in Cuba, with factories performing brilliantly one year and disastrously the next, because of the lack of raw materials: 'If the system is bad in neighbouring socialist countries, with great interdependence, in Cuba, thousands of kilometres away and with permanent payment problems, it was disastrous.'⁷³ Clearly, the planning mechanism had to be improved, both in its democratic function and in fulfilment.

Throughout his critical notes Guevara repeated his criticisms of the AFS, expounded in the Great Debate, for the use of capitalist categories as economic levers to development: material incentives, profit, credit, interest, bank loans, commodity exchange, competition, circulation tax, money as payment,

financial control and the operation of the law of value. 'All the residues of capitalism are used to the maximum in order to eliminate capitalism', complained Guevara. 'Dialectics is a science not some joke. No one scientifically explains this contradiction.'⁷⁴

For Guevara, the problem of a hybrid system began with the NEP, which should have been reversed, not entrenched, following Lenin's death. The *Manual* states that the NEP ensured the triumph of the socialist economy over capitalism in the USSR. Guevara retorted that the NEP

constitutes one of biggest steps backward taken by the USSR. Lenin compared it to the peace of Brest-Litovsk. The decision was extremely difficult and, to judge from the doubts in Lenin's mind that were clear at the end of his life, if he had lived a few years longer he would have corrected its most reactionary effects. His followers did not see the danger and it remained as the great Trojan horse of socialism, direct material interest as an economic lever. The NEP was not installed against small commodity production, but at the demand of it.⁷⁵

The *Manual* criticised Stalin's thesis that commodity circulation under socialism represents a break on the development of the productive forces leading to the need for direct exchange between industry and agriculture. Stalin, it stated, failed fully to appreciate 'the operation of the law of value in the sphere of production, in particular as far as concerns the means of production'.⁷⁶ Despite Stalin's responsibilities for embedding capitalist levers, Guevara still regarded him as less reactionary than the authors of the *Manual*:

In the supposed errors of Stalin is the difference between a revolutionary and a revisionist attitude. He saw the danger in commodity relations and attempted to pass over this stage by breaking those that resisted him. The new leadership, on the contrary, give in to the impulses of the superstructure and emphasise commercial activity, theorising that the total use of these economic levers will take them to communism.⁷⁷

That few voices oppose this, added Guevara, demonstrates Stalin's great historical crime: 'to have underestimated communist education and instituted an unrestricted culture of authority'.⁷⁸ The *Manual* states that material incentives are used to combine individual interests with society's needs, without even mentioning moral incentives. Guevara compared the *Manual's* approach to that of the worker under capitalism whose interest in their work varied with their pay.⁷⁹ Man does not work for himself under socialism, stated Guevara; he works for the society he is part of, because it is his social duty.⁸⁰ 'The mistake is to take material incentives only in a capitalist sense and then castrate them.'⁸¹ Guevara repeated that the challenge is to use moral incentives through

education to link workers to the project of socialist construction and use economic punishments for incompleteness and material and moral awards for over-completeness and skills training.

For Guevara, salaries should be considered as society's recognition that individuals complete a society duty. The *Manual* referred to special economic zones where workers are better paid, which Guevara pointed out contradicts its economic law of distribution according to work done. He concluded: 'This is all the result of the failure of moral incentives; it is a defeat for socialism.'⁸² In response to the *Manual's* citation of Lenin's call to use the 'enthusiasm awakened for the revolution, but based on personal interest, personal benefit, taking economic calculus as the base',⁸³ Guevara wrote: 'It was a crucial moment in the USSR coming out of a long and costly civil war when Lenin, anguished about the general situation, reversed his theoretical conceptions and began the long process of hybridisation that has culminated in today's changes in the structure of economic management.'⁸⁴

Guevara also criticised as mechanistic and arbitrary the *Manual's* approach to emulation, the goal of which it claimed was completing and surpassing the Economic Plan and ensuring uninterrupted socialist production. He argued that emulation was 'in essence a sporting process, collectivised to the maximum by education, it should have as little contact as possible with payment so it is really soaked in what is missing: in the consciousness of the masses'.⁸⁵

The *Manual* cites Lenin again to argue that it is possible in specific historical conditions for backward countries, under the leadership of the working class, to develop in 'non-capitalist ways', from the economic and social perspective. Without passing through capitalist development, they could gradually enter socialism as the democratic-bourgeois revolution gave way to the socialist revolution. Guevara queried whether Lenin used the term 'non-capitalist ways', demanding: 'if it is not capitalist what is it? Hermaphrodite? Hybrid? Facts have demonstrated that there can be only a short period of political struggle before the way has been defined, but it will be capitalist or socialist.'⁸⁶ In the long run there is no third way.

Guevara labelled as 'debatable' the *Manual's* claim that there is no danger of capitalism returning to the USSR; that socialism has triumphed fully and definitively. He said:

The latest economic revolutions in the USSR reassemble those that Yugoslavia took when it chose the path which would gradually take it back to capitalism. Time will tell whether this is a fleeting accident or entails a definitive reactionary current. This is all part of an erroneous conception of wanting to construct socialism with capitalist elements without *really* changing their meaning. This results in a hybrid system that

arrives at a dead end with no exit, or with an exit that is difficult to perceive, that obliges new concessions to economic levers, that is to say retreat.⁸⁷

Against the *Manual's* assertion that the USSR has entered a phase of transition from socialism to communism, Guevara stated that this is against Marxist theory and contemporary logic: 'First, in today's conditions, with the development of the world market, communism would be made on the basis of exploitation and disregard for the people they trade with. Second, the enormous quantities of resources destined to defence do not allow the full development of communism.'⁸⁸

Guevara believed that the use of capitalist categories and the relegation of moral incentives and education had created a hybrid system in the socialist bloc where the capitalist superstructure clashed with the socialist infrastructure and impeded socialist development and the transition from socialism to communism. The drain on resources implied by military expenditure, necessary for defence from imperialism, was a further impediment to socialist transition.

Class relations

Guevara complained that the Soviets' failure to distinguish between pre-monopoly and monopoly capitalism led to an incorrect understanding of class antagonisms between the working class and the bourgeoisie. He noted the analysis of Lin Piao and the Chinese view that a new contradiction had emerged, between oppressed and oppressor nations, and that this must determine the strategies of progressive forces.⁸⁹

Against the *Manual's* formulae for class struggle, Guevara argued that:

- (a) In dependent (oppressed) countries, foreign investment turns the working class into relative beneficiaries compared to the dispossessed peasant class, whose plight they ignore.⁹⁰
- (b) Although historically the national bourgeoisie did play a progressive role in national liberation struggles, today national capitalists make an alliance with imperialism, particularly in Latin America and Africa.⁹¹
- (c) The working class in developed countries do not unite with national liberation movements in a common front against imperialism. They become the accomplices of the imperialists from whom they receive crumbs. The authentic miserable ones in most countries are the landless peasants who constitute the truly revolutionary force.⁹²
- (d) In China, Cuba and Vietnam the revolution was not led by a revolutionary proletariat aligned with the peasantry. In Cuba it was a multi-class movement which radicalised after taking state power.⁹³

- (e) Under socialism, relations between the working class and small peasants (the generators of capitalism) are economically antagonistic, even though the conflict can be mediated politically.⁹⁴
- (f) There is little evidence in USSR or the People's Democracies that socialism eliminates contradictions between the city and countryside. The aim should be fusion, not alliance, because socialism is not a multiclass dictatorship, but the dictatorship of the proletariat and in preparation for the abolition of classes.⁹⁵
- (g) The working class in the imperialist countries strengthens in cohesion and organisation, but not in consciousness. Imperialism has created a dichotomy in their attitude: greater organisation and consciousness of domestic class exploitation, but without proletarian internationalism externally, which is why, at least for now, they are no longer the revolutionary vanguard.⁹⁶
- (h) Opportunism has won over an immense layer of the working class in the imperialist countries, in respect to their relations with the dependent countries: 'Today we could describe as the labour aristocracy the mass of workers in the strong countries with respect to the weak ones.'⁹⁷

Guevara refuted the *Manual's* claim that under socialism trade unions are important organisations of the masses with the right to monitor the state on completion of work and protection legislation. Cadre could fulfil these roles, he said:

trade unions appear anachronistic, without meaning, above all in the way they are organised nationally, which is nothing more than the result of a special situation in the USSR, in a particular historical moment, later copied in the rest of the socialist countries. In a society where the proletariat has taken power, this organ of class struggle should disappear, transform itself. Sustaining it has bought about two things: on one side the bureaucratisation of the workers' movement, on the other, differences between workers, as social assistance depends on the wealth of each trade union which is determined by salary differentials that exist.⁹⁸

For claiming that the dictatorship of the proletariat is not necessarily violent class war, Guevara accused the *Manual* of opportunism: 'The dictatorship of the proletariat is a regime of violence against the bourgeoisie; it is clear that the intensity of the struggle depends on the resistance of the exploiters, but it will never be a regime of rose water, or it will be devoured.'⁹⁹ The term 'democratic centralism' he said, was a sonorous phrase, which encapsulated the most dissimilar political structures and was therefore lacking any real content.¹⁰⁰

While the *Manual* talked about conscious and fraternal worker discipline, Guevara stated that work discipline is imposed by force in class society, including socialism, which uses compulsion assisted by education until discipline becomes spontaneous: 'To be consistent, here they should have put the lever of material interest as a disciplinary factor, which it certainly is, although it goes against communist education in the way it is currently applied.'¹⁰¹

Finally, the *Manual* concluded that even under communism the state will remain necessary, in order to defend the USSR and other countries of the socialist bloc against imperialist aggression, a statement which Guevara replied was irreconcilable with the present theory:

First, can communism be built just in one country? Second, if it is necessary for the State to defend the country, this should complete the function of the dictatorship [of the proletariat], or it is something else, or change the theory. Problems like these cannot be posed (and not resolved) in one isolated paragraph, whatever *Manual* it may be. There are many statements in this book that appear in the formula of the Holy Trinity; they are not understood but faith will resolve them.¹⁰²

Guevara's analysis of class relations focused on the effects of imperialism in the oppressor nation, the oppressed nation and between the oppressed and oppressor nations. This approach was ignored by the mechanistic and orthodox Marxist formulae in the *Manual*. His acute understanding of socialism being the dictatorship of the proletariat and communism being the abolition of classes led him to deride the apologetics of the *Manual* which attempts to air-brush the inherent violence out of class struggle.

International relations

Guevara criticised the Soviet Union's so-called 'Leninist thesis' of peaceful co-existence and economic emulation with the advanced capitalist or imperialist world:

This is one of the most dangerous theses of the USSR. It could be approved as an extraordinary possibility, but cannot become the *leit motiv* of policy. Even now the masses are incapable of stopping the war and the demonstrations against the war in Vietnam are because it is so bloody. It is the heroism of the Vietnamese people's struggle that imposes the solution; the policy of appeasement, on the other hand, has reinforced Yankee aggression.¹⁰³

Where the *Manual* claimed that war is no longer fatally inevitable, Guevara retorted: 'It would be good to determine what it is that these people call war.'¹⁰⁴

Moving on from peaceful coexistence to economic emulation, Guevara agreed that communism presupposes abundance, but opposed the *Manual's* assertion that communism necessarily has much higher productivity than capitalism, because a strict comparison with capitalism was not necessary:

To make communism a quantitative and changing goal that should match capitalist development which continues advancing, is mechanistic on the one hand and defeatist on the other. Not to mention that no one has, or can, establish rules for peaceful emulation with capitalism, a unilateral aspiration, noble in a superficial sense, but dangerous and selfish in a profound sense, as it morally disarms the people and obliges socialism to forget other peoples left behind in order to continue with the emulation.¹⁰⁵

This echoes Guevara's criticisms espoused in international forums that the most advanced socialist countries were failing to provide disinterested support to underdeveloped countries and basing trade agreements on the law of value.¹⁰⁶ For Guevara, the challenge for socialism was not to win in emulation with capitalism, but to resolve the contradictions created by the existence of private means of production, for example, collective farms, and to ensure communist education. Economic emulation, he said, 'is the thesis of an inferiority complex, with eyes permanently fixed on the imperialist model'.¹⁰⁷ The *Manual* stated that peaceful coexistence and economic emulation strengthens the socialist bloc against the capitalist world, drawing dependent countries towards the socialist path through fraternal relations, economic assistance and fair trade. Guevara denied that there is evidence to support this statement. For example, successes in Brazil and India were due to capitalist investment, he said.¹⁰⁸

In response to the *Manual's* claim that economic planning and mutual assistance between socialist bloc countries are a characteristic of the socialist state in regards to economic organisation, Guevara maintained that while this is true in theory, in reality,

internationalism is replaced by chauvinism (of big powers or little powers) or submission to the USSR, thus maintaining the discrepancies between the other democratic peoples [republics] ... How should all this be recorded? It is difficult to say without a profound analysis and research into the motivations of every attitude taken, but what is certain is that it commits an outrage against all the dreams of the world's honest communists.¹⁰⁹

The *Manual* also claimed that economic development in the socialist countries strengthens relations between them, in direct opposite to capitalism. Guevara said: 'The theory could raise the problem of unequal development also for socialism. Practice has posed the problem of irreconcilable contradictions,

sometimes of an ideological character, that always have a material, economic base. From them stem the positions taken by the USSR, China, Romania or Cuba in problems apparently unlinked to the economy.¹¹⁰ Guevara cited the most explosive examples of conflicts as being those between the USSR and Albania, the USSR and China, and China and Cuba, to undermine the *Manual's* rhetoric. He added that: 'There are many more but for tactical reasons or fear they have not erupted openly.'¹¹¹

For Guevara, the example of the Council for Mutual Economic Assistance (CMEA) exposed as a lie the claim of mutual socialist assistance between equal states. This is because the base of the trade price is the international market which is distorted by unequal exchange, enriching the industrialised countries and detrimental for the exporters of raw materials.¹¹² Just as he opposed loan interest being charged to state enterprises within Cuba, Guevara objected to the imposition of interest between socialist countries. It is immoral, he said, 'to charge interest for capital, the amount of interest is secondary'. However, he added: 'The USSR and China have most consistently followed a policy of proletarian internationalism in this regard.'¹¹³ This was recognition of the vital support received by Cuba from both those socialist powers. Guevara demanded the socialist bloc equalise trading relations: 'It is necessary to create indexes of productivity that oblige the more developed country to sell goods cheaper and buy goods at higher prices from the less developed countries.'¹¹⁴ This was necessary to balance growth between the advanced and backward countries. For Guevara, such disinterested internationalist solidarity was the highest expression of socialist consciousness and Cuba had already begun to practice it by the early 1960s, a characteristic of the Revolution which was to expand into massive military, educational and medical assistance to poor countries around the world, from Angola to Venezuela.

Was there a contradiction in Guevara position? He criticised peaceful coexistence, but also pointed out that the arms race is an obstacle to the transition from socialism to communism. This suggests that Guevara did not believe that it was possible to reach communism until imperialist powers had become socialist.

CONCLUSION

Guevara concluded that modifications to Soviet political economy encapsulated in the *Manual* were changes imposed by pragmatism and the lack of scientific analysis.¹¹⁵ The violent shake-up produced by the 20th Congress of the USSR Communist Party in 1956 following Stalin's death disturbed the lethargy in relation to political economy of socialist transition, but did not propel it forward: 'Compromised by the exhaustion of the possibilities for development

because of the hybrid economic system and under pressure from the superstructure, the Soviet leaders took steps backwards that complemented the new organisation of industry. The lethargy was replaced by repression, but both maintained the same dogmatic characteristic.¹¹⁶ Here was Guevara's principal concern, that the lack of theoretical analysis meant that the dialectical processes underway could not be properly analysed and therefore, contradictions could not be resolved; or rather, that they were being resolved, but increasingly in the form of concessions to the law of value and capitalist mechanisms which threatened the restoration of a capitalist mode of production.

Guevara's critique of the Soviet *Manual* constituted a preliminary step taken by him to contribute to the formulation of a theory of transition to socialism which would facilitate the search for solutions to the problems cited. Vitally important is the fact that his theoretical ideas had been developed within the concrete reality of Cuba's Revolution, a society in transition to socialism and through his daily practice as Minister of Industries. As stated, although Guevara criticised from the left, it was intended as constructive.

Guevara sent these notes to Borrego from Prague before returning to Cuba briefly in preparation for the guerrilla campaign in Bolivia. Even there, in the mountains of South America, he continued his theoretical investigations, preparing a manuscript of philosophical notes. What would have been the impact of Guevara's critique of the *Manual* had it been published and publicised? Edison Velázquez, one of Guevara's closest collaborators in Cuba, pointed out that Borrego passed the notes on to Fidel Castro, who had already received the letter cited above in 1965 at the time of his departure from Cuba. Velázquez said: 'Fidel is not stupid and he had a lot of affinity with Che. He began to prepare for events. He couldn't say it publicly because we were receiving everything from the Russians, but he prepared financial reserves for when the Soviets disappeared, otherwise we would not have been able to survive the collapse.'¹¹⁷ Needless to say, Guevara's prediction was correct: capitalism has now returned to all the Soviet bloc countries. Guevara's notes for a critique of Soviet political economy illustrate the scientific method of analysis which led Guevara to forewarn that, if there was no policy change, then collapse was inevitable.

10

Guevara's Legacy in Cuba¹

Tirso Sáenz points up at the large framed photo on the sitting room wall behind him. It shows Guevara squinting in the sun and straining as he carries the corner of a gable-shaped concrete slab on a rooftop during voluntary labour. 'Look at the man on the right of Che', instructs Sáenz. 'That is "El Gato" [the cat], a man from Guatemala who was in Mexico with Che. He died in Guatemala fighting and I saw Che crying when he received the news that El Gato was dead.' Guevara had been giving advice on the struggle underway in Guatemala and he felt the loss of his friend deeply, said Tirso, formerly a vice minister in the Ministry of Industries (MININD). 'I told you, Che set a personal example in everything – can you imagine him encouraging the guerrillas in Latin America but sitting back as a minister in Cuba smoking a cigar? He couldn't do it. I personally heard Che several times saying: "I will not die as a bureaucrat. I will die fighting on a mountain."'²

In April 1965, Guevara left Cuba to join a secret mission of Cuban military assistance to the guerrilla struggle in the Congo. The timing and motivation of Guevara's departure from Cuba have been the source of much speculation. His closest collaborators from MININD are clear that he had conditioned his involvement with the revolutionary struggle in Cuba on an agreement that he would move on following victory. While they lamented his absence on the island, none of his *compañeros* had been surprised when he left.³ Edison Velázquez, who had worked in industry with Guevara since in 1959, explained:

Che had accepted his role in the Ministry of Industries to work with Fidel until the Revolution was established and organised. He covered this stage brilliantly but then he went to fight in other countries because his vocation was to combat what he had seen in Latin America, the situation of the miners and the indigenous populations, and of the African people, not to stay here in comfort. Che was an internationalist. He was not a revolutionary because he wanted to be a minister, but to fight for the poor.⁴

As early as 1962, Guevara's comrade-in-arms and former bodyguard, Juan Alberto Castellanos Villamar, had sensed that the Argentinian was preparing to leave to take up the struggle elsewhere. He went to Guevara and insisted on accompanying him wherever the destination.⁵ The following year, Castellanos was one of several Cubans sent to Argentina where Guevara's compa ero, journalist Jorge Masetti, was already organising a military campaign in the mountains to coordinate with the urban revolutionary movement. When conditions were ripe and the guerrillas had established themselves, Guevara was to join them and take over their command.

Guevara's ambition to foment the socialist revolution in his country of birth was frustrated by various factors which condemned the armed struggle to failure.⁶ It was to be another two years before Guevara left Cuba, and it is likely that his departure was postponed not just to wait until conditions were created for combat overseas, but also until he considered the Budgetary Finance System (BFS) to be adequately institutionalised and capable of being sustained without his physical presence on the island. However it is evaluated, Guevara's decision to renounce his position in the Cuban government and return to armed struggle, first in Africa and then in Latin America, is perhaps less striking than the fact that he stayed so long as part of the Revolution's leadership.

From its establishment in 1961, MININD had expanded into an enormous institution. In December 1964 Guevara described the ministry's progress as satisfactory, 'considering the problems caused by the North American blockade and the radical changes to our external supply sources which has taken place in just three years'. Sugar production had decreased due to the uprooting of cane fields in the first two years of the Revolution and because of labour shortages and serious droughts in the following two years. However, the rest of industry had grown by 6 per cent in 1963, he said.⁷ 1964 saw a further 6 per cent growth in non-sugar gross industrial product (planned at 12 per cent) and MININD's contribution to the state budget rose 135 per cent on the previous year (85 per cent of the planned contribution). Production had increased in three-quarters of MININD's Consolidated Enterprises (ECs) – the balance in favour of consumption goods, reflecting the success of the Vice Ministry of Light Industry relative to the Vice Ministry of Basic Industry.⁸ This was accompanied by a 2 per cent increase in productivity over the previous year, although productivity fell 5 per cent in those enterprises which retracted: construction materials, petroleum and derivatives, foodstuffs, metallurgy and mechanics. In the latter two sectors this was due to the incorporation of new plants and a lack of supplies. The new salary scale, production 'norms' and the plan of rationalisation – which reorganised factories and transferred surplus workers – had a greater positive impact on productivity, but implementation was staggered so the results had not yet been felt across the ministry. In 555

work centres under study which had introduced these measures, the peso value of production per worker had increased 21.7 per cent with a rise in average salary of just 5.2 per cent.

Although the year-on-year comparison is useful, these statistics are just part of the bigger picture. The first half of the 1960s was a tumultuous period: nationalisations, the shift in trade relations, the introduction of state planning, the exodus of managers and professionals, the imposition of the US trade blockade, sabotage and terrorism, invasion and the threat of nuclear conflagration. Despite this, under Guevara's directorship, Cuban industry stabilised, diversified and grew – testimony to his capacity for economic analysis, structural reorganisation and the mobilisation of resources. One Cuban economist who studied the national statistics of the period, Alfredo González Gutiérrez, said:

What took place under Che's management was the transition from a capitalist industrial sector to a socialist-run industrial sector. It was such a smooth and positive transition, without trauma or a fall in production. There has never been a more profound change with less trauma or with a better response to the new conditions created. That was Che's main achievement.⁹

Even within this context there were further constraints as investments in industry were limited by the demand for huge resources in other areas: health, education, construction, agriculture, and so on. In early 1965, Guevara warned: 'if more attention is not given to industry, we will have a serious problem by the end of the decade'.¹⁰ The government lacked access to western credit, denied loans from international financial institutions. It relied on trade and aid from nations whose own development was behind that of the advanced capitalist economies. Cuba's integration into the socialist bloc has led some commentators to dismiss the Revolution's economic and social welfare achievements as merely the fruit of Soviet subsidies. US economist Andrew Zimbalist rejected this simplification:

First ... the magnitude of this aid is vastly overstated by false methodology. Second, even if the exaggerated aid figures were accepted, on a per capita basis Cuba would still be getting less in CMEA [Council for Mutual Economic Assistance] aid than many other Latin America economies receive in Western aid. Third, if one is attempting to disentangle the sources of Cuban growth and to isolate its domestic and foreign components, it is hardly sufficient to consider only the beneficial effects of Soviet aid. One must also consider the monumental and ongoing costs to Cuba of the US blockade.¹¹

The most significant factor, however, is the political character of the endeavour set out by Guevara and the Cuban Revolution – the creation of new society, with new social-relations, new institutions and new values. Guevara accepted that short-term growth could be secondary to the goal of creating a democratic, socialist society: ‘should it be understood that preferential attention to the development of consciousness retards production? In comparative terms, it is possible within a given period ...’¹² Given that the objective was human-centred development, a quantitative evaluation of Guevara’s achievements – focusing on output values – would fail to capture the essence of this contribution to the economics of revolution.

In November 1963, Guevara had talked publicly about the need to divide the ministry: ‘we will have to think about the division of the Ministry which today includes a huge number of diverse industrial activities’.¹³ He proposed a kind of super-ministry with a global vision, overseeing specialist ministries – for example, in mining, energy and electricity. In June 1964, the EC of Sugar was split off to create the Ministry of Sugar (MINAZ). Over the next three years the foodstuffs branch passed into the jurisdiction of the National Institute of Agrarian Reform (INRA), the Vice Ministry of Light Industry became the Ministry of Light Industry, and a new Ministry of Electricity was created. By 1967, the remaining apparatus of MININD became the Ministry of Basic Industry. Orlando Borrego, his deputy from 1959 to 1964, said Guevara desired other ministries to adopt the BFS, although he knew that other leaders were not convinced that the system was suitable for Cuba. Borrego – who, as Minister of Sugar, did implement the BFS – speculated that ‘if Che had lived, many other ministries which came out of MININD would have applied the BFS – but it lacked its strongest defender. The BFS was novel and audacious in socialism. There were more conservative people who wanted to follow the experience of Europe.’¹⁴

Guevara’s incorporation into Cuba’s revolutionary struggle created the rare opportunity to develop a radical political economy from a position of power and practical influence as a member of the new Cuban government. By 1965, he was confident that the BFS was a major advance in socialist political economy. However, the tools he left behind were underutilised. This limited his legacy. Nonetheless, many of his policies have been embedded in Cuba society. What is more, Guevara’s colleagues continued in management roles long after his departure and some of them have employed projects or principles developed under the BFS.¹⁵ This, in turn, has strengthened Guevara’s impact on the theoretical and organisational structures in Cuba over the last half century.

Guevara’s outstanding contribution was to devise a system of economic management that gave expression to his Marxist analysis in practical policies, applying his theory of socialist transition to the reality of 1960s Cuba and its

level of economic development. Although the BFS was developed in response to particular challenges – which means that blanket copying would contradict the dialectical methodology Guevara applied – it is nonetheless possible to highlight key principles and a methodology of enduring relevance:

The BFS

1. Finances should be centrally controlled; enterprises operate with a budget and hold no independent funds.
2. Money serves as a means of account, a price reflection of an enterprise's performance, not as means of payment or as a form of financial compulsion. There is no credit or interest but only planned investment directed by the state according to the national development strategy.
3. The socialist economy functions as one big factory. There are no financial relations or commodity exchange between state-owned enterprises because there is no change in ownership when products are transferred between them.
4. Education, training and salary structures foster a concept of work as a social duty, decommodifying labour by gradually cutting the link between work and remuneration. Education must be linked to production and self-improvement to economic development.
5. The law of value and the Plan give expression to contradictory and antagonistic forms of social organisation of production and distribution. Planning allows the conscious organisation of the national economy in pursuit of political objectives. The Plan must be democratically formulated by workers, but its fulfilment is ensured by a system of supervision, inspection and economic analysis in real time, inventory controls and annual reports. These are elements of 'administrative control', an alternative to the financial control applied under the Auto-Financing System (AFS). Administrative mechanisms, combined with appeals to consciousness, are the main levers for increasing efficiency.
6. Lowering production costs, not the profit motive, is the key to increasing productivity. It must be accompanied by quality controls.
7. The most advanced forms of technology and management techniques possible should be borrowed from capitalist corporations without fear of 'ideological contamination' – preparing for technological advances even while struggling to overcome backwardness.
8. Flexibility is necessary in decentralising without losing control and centralising without curbing initiative. Tapping into the creative energy of workers to find solutions to daily production problems means encouraging the process of learning by doing, trial and error, making corrections *sobre*

la marcha (on the move), and promoting the view that commitment to production is a revolutionary act.

9. Workers must appropriate the production process, determining the plan and developing the productive forces for themselves as the collective owners of the means of production. This is essential for transforming surplus value (in capitalism) into surplus product (in socialism) and production for exchange (exchange-value) into production for use (use-value).
10. Under capitalism, competition for profits constantly revolutionises the productive forces. Socialist society must foster the application of science and technology to production without the profit motive. Research institutes prepare for immediate and future developments, working closely with the relevant ministries, enterprises and student faculties.
11. Economic development strategy should focus on the full chain of production from raw materials to electronics and automation. This is essential for securing an independent socialist economy and obtaining value-added from exports.
12. There is a dialectical relationship between consciousness and production. Incentives are the key to raising productivity and efficiency. Material incentives must be gradually replaced by moral incentives and the concept of work as a social duty, replacing alienation from the production process and the antagonism generated by class struggle with integration and solidarity.
13. There is a need to create forums for criticism and open debate, being determined to get to the root of problems in order to solve them. Leaders must be responsible and accountable. It is essential to work with technical experts regardless of their political affiliations, harnessing their expertise in the interests of socialist production and integrating them into the revolutionary process.

The *Guevarista* pendulum

The problem at the heart of socialist construction is how to increase consciousness and productivity simultaneously. Although the search for a solution to his problem was central to Guevara's endeavour, he did not 'discover' the problem, nor was he unique in searching for practical solutions. However, Cuba was the first country in Latin America to have a socialist revolution, and he forced the question onto the agenda in early days of the Revolution. This fact explains the continued recourse to *Guevarista* analysis whenever and wherever history throws up similar challenges. In the project of revolutionary transformation, Guevara serves as a reference point, the most vocal advocate of innovative ideas for socialist transition in Latin American conditions.

Guevara's proposals have never met with consensus within Cuba. While most Cuban leaders agree in theory with his approach to socialist construction, many have argued that conditions were not ripe for its implementation.¹⁶ The opinions and priorities of the Cuban people are diverse and divergent, and this is reflected in the coexistence of different political tendencies within the leadership that represents them. The measures introduced in each period have depended on which tendency has been able to win the argument or secure a consensus at each stage, and the outcome is largely determined by material conditions on the island and internationally.

Consequently, the economic history of the Cuban Revolution can be portrayed as a pendulum swinging between what is desirable and what is necessary – with Guevara's ideas being associated with the vitality of the Revolution. When new policy debates emerge, proposals are often phrased in terms of their proximity to Guevara's analysis. The periods of 'Rectification' from 1986 to 1990 and the 'Battle of Ideas' from 2000 to the present time reflect the tenacity of Guevara's Marxist analysis – resisting pressures, both internal and external, to turn to market forces to resolve the problems of underdevelopment. The *Guevarista* pendulum reflects Cuba's ability to push forward with its socialist development, creating innovative new social and political forms, without falling back on capitalist mechanisms to solve economic problems. Swings in the *Guevarista* pendulum can be seen in the following cycles:

1965–67 (swing away): When Guevara left Cuba in April 1965 he was substituted by MININD's first vice minister, Arturo Guzmán Pascual. After Fidel Castro read Guevara's farewell letter making his departure official in October 1965, Joel Doménech Benítez became the new minister. Doménech dismantled many departments and procedures. For example, the Department of Scientific-Technical Information was accused of having 'too many papers' and was closed as part of the Campaign Against Bureaucracy. Its director, María Teresa Sánchez, pointed out the irony given that they had no computers: 'We had to work with papers and sometimes we didn't even have paper!'¹⁷ Also in 1965, the Ministry of Finance, which Guevara argued in the Great Debate could replace the National Bank as the key financial institution under socialism, was dissolved. This appeared to be a rejection of the BFS.

1967 (swing towards): However, in 1965 Cuba's president and Minister of the Economy, Osvaldo Dorticós, instructed all ministries to implement a new Registry System of economic management which, he claimed, was consistent with Guevara's economic ideas. In reality, it abandoned key premises of the BFS: economic analysis and cost controls. As Minister of Transport, Faure Chómon Mediavilla was among those instructed to implement the Registry System:

Everyone made their own interpretation of how to apply the basic elements of the System. Many interpreted it incorrectly deciding that they could produce without concern for costs ... At that time we did not fully understand Che's ideas and the *compañeros* who proposed the System did not prepare specialists in the productive and services sectors of the country. It was pure idealism in which, logically, Che's absence was felt.¹⁸

From April 1967, the state budget was eliminated, all charges and payments between ministries and enterprises were abolished and replaced with a system of 'economic records'. In 1968, the correlation between production and remuneration was severed, and the last forms of taxation abolished.¹⁹ University studies in socialist political economy and public accounts were closed down. Fidel Castro said that failure to analyse whether the BFS or AFS was most appropriate in Cuba led to the 'less correct decision' of inventing a new system: 'When it might have seemed as though we were drawing nearer to communist forms of production and distribution, we were actually pulling away from correct methods for the previous construction of socialism.'²⁰ The annual budgets could not be monitored or controlled. One consequence of the lack of control mechanisms was that during the mass mobilisation of labour for the campaign to harvest 10 million tons of sugar in 1970, the disruption to other sectors of the Cuban economy resulting from the drain of resources was not sufficiently monitored. In March 1968, the Great Revolutionary Offensive was launched to put an end to the non-agricultural private sector. Over 58,000 small private businesses were nationalised within one month. A member of the Central Planning Board (JUCEPLAN) at that time, Alfredo González Gutiérrez, said that to associate the Registry System with Guevara 'is a great historical injustice, because if there was someone in this country who was concerned for costs and for efficiency it was Che'.²¹ The Cubans moved to reverse the fall in production and productivity and reintroduce economic controls.

1970s (swing away): The increasing influence of Soviet advisors culminated in 1976 in the adoption of the Soviet Planning and Management System, which Guevara had opposed. Enterprises enjoyed financial autonomy, traded commercially between themselves, operated on a profit-and-loss basis and paid taxes like capitalist firms. Private farmers markets were opened up. Management dominated decision-making and productivity was fostered through material incentives – bonuses for overproduction. With hindsight, Fidel Castro said: 'we had fallen into the swamp of bureaucracy, of cheating, of lies, we had fallen into a load of vices that, really, would have horrified Che, because if one had said to Che that one day in the Cuban Revolution there would be enterprises that stole to be profitable, he would have been horrified'.²² The

negative effects of 'sovietisation' – corruption, bureaucracy, separation of the leadership from the people, production focused on 'value' targets, not solving problems – became clear in the early 1980s. These weaknesses strengthened the *Guevarista* tendency, which argued for a change in strategy.

1986 (swing towards): Cuba entered a period known as 'Rectification of Errors and Negative Tendencies', which meant pulling away from the Soviet model. Production was again measured in terms of output, not values; bureaucracy was slashed, private markets were closed, and non-material incentives were revived. Voluntary labour brigades worked in social construction and housing, as they had in Guevara's period. Paying homage to Guevara on the twentieth anniversary of his death in 1987, Fidel Castro declared: 'We are rectifying all kinds of shoddiness and mediocrities that were precisely a negation of the ideas of Che, of the revolutionary thought of Che.'²³

1991 (swing away): Before the process of Rectification could be consolidated, the Soviet bloc collapsed leaving the Cuban economy to plummet into a 'Special Period' of economic crisis with the loss of around 80 per cent of its trade. Cuba's gross domestic product plummeted by 35 per cent – the scale of collapse usually associated with war, famine or natural disaster. The effect was exacerbated by punitive laws tightening the US blockade in 1990, 1992 and 1996.²⁴ This resulted in critical scarcities of hydrocarbon energy resources, fertilisers, food imports, medicines, cement, spare parts and equipment, and resources in every sector. Rations were cut significantly, reducing food consumption to one-fifth of previous levels; malnutrition appeared, industries closed, unemployment rose, and there were frequent cuts in power and water supplies and shortages in basic goods. Cuba's transport system deteriorated. Investment in infrastructure was halted because of a lack of materials. Cubans dug deep to find what they needed to survive, both as individuals and as a socialist society.

The pragmatic reforms introduced in the 1990s were conceded as a move away from the *Guevarista* model. They included joint ventures with foreign capital to revive industry and expand tourism to secure the hard currency necessary for importing from the international economy at world market prices. The US dollar was legalised and dollar shops were opened. Tractors were replaced with human and animal labour in agriculture, organic fertilisers, crop rotation techniques and urban gardens were developed. The army was sent to farm fallow land to increase agricultural production. State farms were turned into cooperatives, and farmers' markets were reintroduced. Small-scale private enterprise was legalised to ease unemployment and provide goods which the state was incapable of supplying.

In 1997, the Cuban Communist Party Congress conceded greater space for the functioning of market mechanisms and increased investment efficiency. Cuban enterprises controlled their own finances and those with hard currency purchased imports directly – giving them greater financial autonomy than the AFS enterprises which Guevara had opposed but which had at least been subject to a state trade monopoly. The result was a palpable rise in inequality, crime, prostitution and individualism. Legislation was introduced to restrict these phenomena; for example, by taxing private enterprises and prohibiting Cubans to stay in tourist hotels with foreigners. Nonetheless, these ‘liberalising’ reforms were conceded as necessary to bridge the crisis and avoid political upheaval. Despite the lack of material resources, the government determinedly avoided closing schools, hospitals, old peoples’ homes, or any of its many social welfare provisions. Once the economy stabilised and recovered, pro-market measures began to be retracted.

2000 (swing towards): Material recovery²⁵ was accompanied by a campaign of political regeneration, known as the ‘Battle of Ideas’, involving investments in infrastructure and hundreds of social programmes to reverse the marginalisation and inequalities provoked during the previous decade. Within seven years, more than 7,000 projects were initiated: investigations into malnutrition and the provision of basic goods where most needed, training teenagers as community social workers, constructing schools to reduce class sizes, providing multiple adult education courses and technical training, building new medical and therapeutic facilities, a national network of video and computer clubs, solar panel electricity provision in rural areas, TVs, videos and computers in every school classroom. Access to these facilities and programmes is free to all Cubans. Salaries and pension were augmented and state employment increased.

This process of reconsolidation of socialist principles has invoked a return to Guevara’s concept that education and culture are essential to create commitment to political ideas, but that these remain abstract if the standard of living does not alleviate daily concerns for survival. Material improvements should not be achieved by promoting market exchanges and encouraging private enterprise, but by budgetary controls, central planning and state investment in skills training and education, fostering industry, exploiting endogenous resources, diversifying agriculture and investing in research and development for industrial production and the medical industry.

In 2004, Alfredo González Gutiérrez, then advisor to Cuba’s Minister of the Economy, said: ‘Some aspects of Che’s ideas have become redundant today because of new realities. But the way in which he thought about problems is still relevant and the way he identified the underlying problem was more profound than any other person in our context ... I am trying to go back

to Che's ideas, because I am now able to appreciate what he was trying to do.²⁶ He was not alone among policy-makers reinvestigating Guevara's radical political economy and a number of political and economic measures taken in Cuba in recent years have been compared with Guevara's BFS.²⁷

RECENT ECONOMIC AND POLITICAL MEASURES

In reality, the *Guevarista* pendulum is more complex and contradictory than the simple schema here suggests; hence the confusion concerning the political significance of recent developments in Cuba, particularly those associated with the Enterprise Perfection System (EPS). This system was first employed by the Ministry of the Revolutionary Armed Forces (Ministerio de las Fuerzas Armadas Revolucionarias – MINFAR), headed by Raul Castro, during Rectification in 1987 – the year that Fidel Castro declared: “Had we learned about Che's economic thought, we'd be a hundred times more alert ... I'm absolutely convinced that ignoring those ideas would be a crime.”²⁸ The EPS was legislatively strengthened in August 1998, during the ‘liberalising’ reforms of the Special Period which gave financial autonomy to Cuban enterprises.

However, separate legislation introduced between 2003 and 2005 eliminated this aspect from the system by recentralising the country's financial resources, providing significant funds for investment and social expenditure as well as enhancing central control of finances and monetary policy in general. In 2003, US dollar payments between Cuban enterprises were abolished and replaced by payments in Cuban convertible pesos (CUCs), a currency pegged to the US dollar but printed and controlled by the Cuban central bank since 1993. Enterprises had to swap convertible pesos for US dollars held by the central bank to pay for imports, thus recentralising control of this activity. US cents were removed from circulation and replaced by CUC coins. In October 2004, the removal of the US dollar from domestic commerce became an imperative following renewed attacks by President Bush's administration to prevent Cuba from accumulating or trading in hard currency – a Cuban Assets Targeting Group was set up to stop dollar flows into and out of Cuba. The motives for this were similar to those which had led Guevara to organise the printing of new banknotes introduced in August 1961 – to stop the financing of counter-revolutionaries, to prevent the US using money supply as a weapon to destabilise the economy and to strengthen the state's control over national development strategy.²⁹ In the three weeks Cubans were given to swap their US dollars for CUCs, the sum deposited in the island's banks was greater than deposits over the previous ten years – providing significant funds for investment and social expenditure.

Finally, in January 2005 financial autonomy was removed from Cuban enterprises (including the Cuban dividend in mixed enterprises) and their CUC reserves transferred to the central bank, which became responsible for allocating them and approving all future financial transactions. The result was a degree of financial centralisation not seen since Guevara's BFS.³⁰ This measure was introduced as Cuba signed significant trade deals with Venezuela (initiating the Bolivarian Alternative for the Americas – ALBA), China, and Canada, and following the discovery of Cuban oil reserves, all of which substantially increased the flow of foreign investment into Cuba.

By 2006, this version of the EPS – enterprises without financial autonomy – was operating in one-third of the country's enterprises (767 in total), 10 per cent of them army enterprises.³¹ In August 2007, the system's implementation was extended across the economy. The EPS has been developed through a gradual process of trial and assessment over two decades, far longer than the four years in which Guevara experimented with his own system. Although it has evolved over two full swings of the Guevarista pendulum, commentators outside Cuba have tended to identify the EPS with economic liberalisation. Partly because it became significant during the Special Period, but arguably also, analysis has been skewed by conceptual paradigms and prejudices. For those trained in bourgeois economics, terms like 'efficiency', 'profit', 'market' and 'price' are analogous to capitalism. However, as Fidel Castro pointed out: 'we are making socialism with these categories adopted from capitalism, which is one of the greatest concerns we have'.³² Part of the ongoing debate concerns the search for a terminology which more appropriately expresses the characteristics of socialist development.

The EPS does indeed measure production in terms of 'profit'.³³ It includes financial relations between workplaces and the use of credit and collective material incentives for workers. However, in its latest form the system has similarities with Guevara's BFS: applying economic analysis, cost controls and administrative procedures to ensure productivity and efficiency gains. As with the BFS, enterprise surpluses ('profit') under the EPS belong to the state, whose interests are prioritised along with the plan. Both systems link collective decision-making, workers' management and technological advances in achieving efficiency, employing a mixture of moral and collective material incentives to reward increased contributions to the socialist state. Some enterprises are grouped according to productive sector, as under the BFS, management personnel are to engage in constant training, trade unions are responsible for promoting economic efficiency and human beings are located at the centre of productive activity. This is not quite the administrative control which Guevara's advocated, but neither is it the financial autonomy and

competition of the Soviet system, or a Chinese-style market-opening to lead the economy back to capitalism.

The number of mixed enterprises (Cuban state and private/foreign capital) operating in Cuba decreased by 41 per cent from 403 in 2002, to 236 in 2006, and accounts for less than 1 per cent of employment.³⁴ Meanwhile, large investments increased in major infrastructural and development projects in strategic sectors like mining, which Guevara had prioritised, energy and telecommunications. Many of these are carried out by joint ventures with state companies from Venezuela and China. The result is to limit the sphere of operation of capitalist mechanisms introduced via foreign capital diminishing their impact on Cubans as producers and consumers, whilst simultaneously strengthening the state's economic resources based on high value-generating activities, especially in nickel and oil production. State investment in manufacturing and food processing industries has significantly increased employment in these sectors and social expenditure in transport, communications and housing infrastructure have improved the general standard of living, although individual consumption has not yet significantly increased.

The year 2006 dawned as the Year of the Energy Revolution – another measure to increase the state's control over finances and the efficiency of investments – as well as consolidating projects underway since the Special Period to save and rationalise the use of energy resources, reduce import dependency, and develop renewable energy. Efficient new power generators were installed across the island, and old durable goods were replaced with energy-saving equipment, raising the island's capacity for electricity generation to four times its needs and saving the government millions of pesos formerly spent on subsidised fuel. Fidel Castro estimated that Cuba could save two-thirds of its energy consumption, worth more than \$1.5 billion a year; nearly double the sum of Cuban wages, or five times the total cost of Cuba's higher education system.³⁵

The centralisation of state finances provides a strong lever to foster productivity and production gains via planned investments, as long as it is not undermined by private appropriation of state resources. Therefore, in November 2005, Fidel Castro called for a domestic war on corruption, on the 'new rich' and on 'parasites' who benefited from free welfare and education provision while refusing to contribute to society. This was part of an ideological struggle to reverse a general acceptance among the population that low salaries and scarce material goods justify widespread pilfering of state resources. Back in 1964, Guevara had warned that 'the possibilities for thieving will exist for a long time under socialism until there has been a change in people's mentality'.³⁶ The BFS embedded strict accounting and inventory control procedures to prevent it.

Foreign Minister Felipe Pérez Roque said that the 3 million Cubans who had reached adulthood or adolescence during 15 years of the Special Period had ‘grown up in a society in which these vices developed, these negative tendencies that comrade Fidel denounced ... they didn’t grow up in a country in which each one receives according to his work; they have known the epoch in which individualistic tendencies have developed in our country, every man for himself.’³⁷ Under socialism, without the threat of unemployment inherent in capitalism, only a highly developed collective consciousness can prevent self-interest jeopardising the national project. Creating this consciousness is the challenge of the Battle of Ideas, just as it was in Guevara’s BFS. In this context, universal rationing is increasingly considered as an obstacle to the concept of work as a social duty. The average family pays less than \$5 monthly for rationed products which cost the state \$61.³⁸ Once salaries correspond to the cost of living, which depends on adequate food supplies, the ration book is likely to be eliminated, pushing thousands of workers back into productive activity through the need to earn a living. It would be replaced with direct support for those who cannot contribute to social production.

Raúl Castro and the new Great Debate

On 26 July 2007, Raúl Castro expanded on themes raised by Fidel Castro in November 2005. He highlighted the problem of low salaries and high food prices, that prices cannot go down until production and productivity go up; the need to reduce imports; the drive to rationalise production, the continuing problem of the US blockade, and the need for foreign investment whilst preserving the role of the state and the predominance of socialist property.³⁹ Underlying his speech was the concept of Cubans as citizens, not consumers, with responsibility to society: ‘We need to bring everyone into the daily battle against the very errors which aggravate objective difficulties from external causes’, he said, echoing Guevara.⁴⁰ Deepening the analysis in a concrete way, he initiated a process of popular consultation during which the Cuban government created forums for everyone to contribute to a new Great Debate about Cuba’s socioeconomic problems – 1.3 million anonymous complaints and proposals were collected and analysed, facilitating a comprehensive assessment of the state of the country and the consciousness of its people.

Some of the complaints registered reflect a search for individualistic solutions to material scarcity – proposals which would improve conditions for individuals but risk increasing private property relations and capitalist mechanisms. For example, opposition to rules that individuals can only sell their cars or houses to the state at controlled prices and to limits placed on the productive capacity (capital accumulation) of family or cooperative farms. The desire to remove central controls reflects the state’s inefficiency in resolving production and

distribution problems. Clearly, however, to concede to these demands is to open the gate to capitalist property relations.

When Raúl Castro announced that structural and conceptual changes would be introduced, commentators outside Cuba jumped on this as evidence of economic 'liberalisation', and when he outlined the need to improve the state's payment to farmers for agricultural produce, some equated this with the transference of state land to private ownership. Since mid 2008, procedures have been initiated to hand over idle land, in usufruct, to those who will till it – an attempt to increase production without drastically changing property relations. The key point is providing access to the land to augment production, not the question of ownership. It does not signify a political preference for 'privatisation' or decentralization. Indeed, announcing the measure, Raúl Castro confirmed this by stating: 'I am a firm admirer and defender of large socialist state enterprises, be they agricultural, industrial, or otherwise.'⁴¹

In summer 2008, the removal of the cap on wage bonuses for workers who meet or exceed production targets was met by sensationalist headlines as newspapers around the world heralded the restoration of capitalism in Cuba – the death knell of Che Guevara's 'new socialist man' and the 'egalitarian wage system'.⁴² In reality, the new regulations were introduced to standardise salary policy across the economy as part of the extension of the EPS. Capped or not, bonus payments continue to be awarded for over completion of the national plan in the production of physical goods or services – that is, in terms of use-values, not in terms of exchange-values. The plan is discussed in workers' assemblies and formulated according to political priorities, not market forces. Bonus payments remain capped at 30 per cent for various bureaucrats, technicians and economists to prevent the emergence of a technocratic elite.

What lies behind the new wage incentives is not a return to capitalism but an effort to reduce Cuba's vulnerability to the global crisis resulting from a rise in food and fuel prices. Like other recent measures, it aims to dramatically increase internal production and productivity, particularly in agriculture and exports. Although the Cuban people are protected by highly subsidised state provision of necessities, according to Magalys Calvo, Vice Minister of the Economy, over 80 per cent of the basic food basket is imported.⁴³ As a result of the dramatic global rise in prices, the volume of food imported in 2007 was set to cost an extra \$1.1 billion to import in 2008.⁴⁴ Meanwhile, the amount of cultivated land fell by 33 per cent between 1998 and 2007, leaving up to 50 per cent of arable land idle or underused.⁴⁵ Recent reforms aim to stimulate productive labour on the land.

Far from representing a profound shift in the structure of Cuban society, the 2008 measures were taken to preserve existing state welfare provisions and strengthen the socialist economy. They represent the latest stage in

a continuing and dialectical debate which is as old as the Revolution. It addresses the question at the heart of the revolutionary process: in an underdeveloped country, how is it possible to achieve economic growth with equality in a post capitalist society? Given concrete conditions, what strategies are best to build socialism in a blockaded and trade-dependent island? Evaluating half a century of Revolution, it is clear that Guevara was Cuba's most vociferous and innovative protagonist in the search for solutions to this challenge.

Economic 'liberalisers' in Cuba argue that it is possible to increase private ownership and production without undermining socialism. During the 2007 consultation process, Aurelio Alonso, deputy director of the magazine *Casa de las Américas*, promoted private agricultural production: 'The family should not invest all its productive effort for the benefit of the state. In the end, we should be less fearful of letting people make money ... the market must play a role.'⁴⁶ Pedro Monreal González, from Cuba's Centre for Research into the International Economy, went further, arguing that credit institutions should be created to provide \$20,000 capital to individual entrepreneurs to establish private businesses. Monreal proposed: 'to organise structural reform of agriculture in terms of transferring state land to private or cooperative land ... [and to] leave the market to reign'.⁴⁷ His contemporary development models are China and Vietnam.

The question of land ownership lies at the heart of the ideological debate about the future of the Cuban economy. The liberalisers of today echo the advocates for 'market socialism' in the socialist countries in the early 1960s, claiming that increasing private property relations will not undermine socialism. As Guevara warned, liberalisers will demand greater concessions to market forces until production and distribution are determined by the operation of the law of value.⁴⁸ That would mean a return to capitalism.

The popular consultation coincided with commemorations for the 40th anniversary of Guevara's execution in Bolivia. In early October 2007, ministries, institutions, workplaces, trade unions, study centres, grassroots and cultural organisations throughout Cuba paid tribute to Guevara. Many of these events, including those in the Ministry of the Economy, emphasised his opposition to adopting capitalist mechanisms to resolve problems within the socialist economy.⁴⁹

A week later, Venezuelan President Hugo Chávez was in Cuba to sign 14 new collaborative projects between the two countries in construction, energy, tourism, petrochemicals, fishing, telecommunications and nickel, raising the number of joint projects at that time to 352, across 28 sectors of economic and social development. Signing the agreements, Raúl cited the Joint Declaration which initiated ALBA: 'trade and investment are not ends, but

means to achieve just and sustainable development, as true Latin American and Caribbean integration cannot be the blind child of the market, nor a simple strategy to expand external markets or stimulate trade. To achieve it requires the effective participation of the state as the regulator and coordinator of economic activity'.⁵⁰

By August 2008, ALBA incorporated Cuba, Venezuela, Bolivia, Nicaragua, Dominica and Honduras (with several collaborating countries) in projects of humanitarian, economic and social cooperation, in exchanges which are not determined by the operation of the law of value. These countries face many of the same challenges which Guevara and Cuba confronted in the early 1960s: lopsided economies – highly developed key industries surrounded by seas of underdevelopment – held to ransom by massive debt and threatened by international finance capital with the power to bankrupt or decapitalise countries overnight.⁵¹ Outside Cuba, wealth, the means of production and power structures are still largely in private hands. Every measure enacted to transfer them directly into the hands of the working class, or to the state, will be met with aggression from imperialism and its domestic allies.

Today, Orlando Borrego Díaz is advisor to Cuba's Minister of Transport. Since 2004 he has advised the Venezuelan Constituent Assembly, Venezuelan economists and other policy-makers about the BFS. Ángel Arcos Bergnes, another member of Guevara's inner circle from MININD, has also travelled around Venezuela and elsewhere in Latin America speaking about his experiences of working with Guevara. Cuban *Guevaristas* clearly have an attentive audience in revolutionary Venezuela, but it is too early to evaluate their practical impact. 'New' forms of political and economic organisation are emerging under the banner of the Bolivarian Revolution in Venezuela. Some of them – nationalisations, welfare provision, social production and workers' management – are central tenets of socialist society. Others draw on Guevara's model – endogenous development, Consolidated Enterprises, participatory budgets, adopting capitalist technology for social production and the emphasis on consciousness while undermining the reproduction of capitalist production relations. Chávez remarked: 'I have discovered Che the critical thinker, Che the transformer of the economic system, Che of the stage of industrialisation in Cuba, Che and his reflections in Africa, Che and his criticisms of the Soviet model and the Soviet manual, all of which Borrego has been elaborating upon with an expertise and loyalty to the thought of Che.'⁵²

The phrase 'socialism for the twenty-first century' has begun to enter the academic literature and popular discourse, yet few have attempted to explain what this means; what forms the new society will take and how it will differ from those previously adopted under the banner of socialism. However, key players in Cuba, Venezuela and Bolivia have laid claim to

Guevara's legacy in this process. Chávez assumes Guevara's analysis to counter forces within the Bolivarian Revolution which aim to bolster the domestic capitalist class. According to Borrego, Chávez and the pro-socialist tendency 'are very concerned that the mechanism of the market, the laws of capital, which were misinterpreted and misused in the socialist states of Europe, can damage the developing Venezuelan economy. Chávez fully understands the totally negative experience in eastern Europe.'⁵³ In January 2008, the draft programme of the newly formed United Socialist Party of Venezuela included 'the strategic objective of neutralising the operation of the law of value within the economy.'⁵⁴ Relative success or failure in implementing the principles of Guevara's approach to the economics of revolution in Cuba, Venezuela, Bolivia and elsewhere will be a litmus test for the feasibility of building socialism for the twenty-first century.

CONCLUSION

The contemporary debate in Cuba concerns issues thrashed out but not resolved in the Great Debate of 1963–65 and confronted again during Rectification. Socialist transition is a dialectical process self-consciously directed by those who live it. They have to resolve the contradiction between the plan and the market, increasing productivity and consciousness simultaneously, and determine the balance of responsibility for provision between the individual and the state, how remaining class antagonisms should be mediated, how to ensure discipline with resources and at work, how society's wealth is to be distributed, how much control and centralisation is appropriate.

Policy is formulated within existing limits: the political commitment to socialist welfare provision, the planned economy and the dominance of state property; and economic constraints such as the US blockade, trade dependency, low levels of technological development, and difficulty in obtaining credit. Guevara provided a methodology for socialist construction within these limits. The need for a comprehensive approach, lacking in Cuba since the mid 1980s, will likely be a focus of the Cuban Communist Party's 6th Congress, the first to be held since 1997, in late 2009. The debate will focus on balancing the need for equality, social property and consciousness with the urgent need to increase productivity and efficiency.

Fifty years since the Revolution and 40 years since Guevara's death, these questions are still being addressed in the face of a brutal blockade, sabotage and attack. Guevara's analysis has continued as a point of reference to measure the vitality of the Cuban Revolution. Borrego asserted that 'Without the development of consciousness in our country we would not have been able to survive until now. In no country in the world do material incentives lead people

to a revolutionary consciousness, much less a humanist consciousness with ideas about cooperation and good relations within and outside the country.³⁵⁵

As long as revolutionary states set out to build new societies with economic growth and social justice, Guevara's theory and practice will remain relevant and influential. In the economics of revolution, his legacy will grow in significance – particularly in Latin America, as radical governments undertake bold economic transformations of their own.

Appendix 1: Ministry of Industries Organigram*

Minister					
First Vice Minister			Management Council		
Technical Advice					
Personnel	General supervision	General Services	Special Affairs	Legal	Provincial Delegations & CILOs
VM Basic Industry	VM Light Industry	VM Industrial Construction	VM Economy		VM Technical Development
Management Council	Management Council	Management Council	Management Council		Management Council
VM's Office	VM's Office	VM's Office	VM's Office		VM's Office
Technical Advice	Technical Advice	Technical Advice	Technical Advice		Technical Advice
Energy Branch	Food Stuffs Branch	Plan of Industrial Construction	General Office of Coordination		Cuban Institute of Mineral Resources
Electricity	Flour	Projects	Production		Cuban Institute of Mineral & Metallurgy Research
Petroleum	Beers & Malts	Execution of Projects	Supplies & Delivery		Cuban Institute for Research into Sugar Cane Derivatives
Gas	Mineral Water & Soft Drinks	Liquor & Wines	Investments		Cuban Institute for the Development of the Chemical Industry
Metallurgy Branch	Cigarettes	Investors	Work & Salaries		Cuban Institute for Machinery Development
Iron	Cigars	Provisions	Finance & Cost		Cuban Institute for Machinery Development
Non Irons			General Office of Perspective Plan		Office of Automation
Mechanics	Light Chemicals Branch		General Office of Control		Electronics
Agricultural Equipment	Soaps & Perfumes		Statistics		Norms, Metrology & Quality Control
Automotive	Pharmaceutical Products		Methods & Systems		Development of Technology Products
Naval Construction	Rubber		Organisation		Training
Heavy Chemicals Branch	Plastics				Scientific-Technological Collaboration
Sugar	Glass				Department of Applied Psychology
Sugar	Paint				Department of Scientific-Technological Information
Paper	Matches				Documentation
Artificial Wood	Light Mechanics Branch				
Basic Chemicals	Metal Canning				
Fertilisers	Electrical Equipment				
Extractive Branch	Paper & Cardboard Converters				
Minerals	Wood & Furniture & Packaging				
Nickel	Graphic Arts				
Salt	Local Industries				
Cement	Raw Material Recuperation				
Ceramics	Services				
	Toys				
	Metal Conformation				
	Textile & Leather Branch				
	Weaving & Plain Textiles				
	Knitted Fabric				
	Hard Fibres				
	Special Textiles				
	Tanneries				
	Leather Derivatives				

* This should be considered a snapshot of the ministry structure, as the apparatus underwent constant reorganisation. The organigram shows the Consolidated Enterprises. It does not include the production units which were grouped within them.

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Appendix 2: Living to Tell – Short Biographies of the Principal Interviewees¹

Ángel Arcos Bergnes

Born into a lower-middle-class family, Ángel Arcos Bergnes began work at the age of 13, selling fruit in his town in Matanzas province. From 1946, he started employment as an accountant and auditor, mainly for foreign-owned companies. Between 1956 and 1959 he was an auditor in the US Verientes Sugar Company and was based in Camagüey, in the east of the island. He was an undercover supporter of the 26 July Movement (M26J).

Having nationalised his own company, in 1960 he was named General Auditor of the General Sugar Mill Administration (Administración General de Ingenios – AGI) in Camagüey province which had 24 mills. The AGI operated within the National Institute of Agrarian Reform (Instituto Nacional de la Reforma Agraria – INRA), but it was transferred to the Ministry of Industries (MININD) when it was set up in February 1961. Arcos' auditing responsibilities increased and in late 1962 he transferred to Havana as general auditor of Cuba's 161 mills and 50 related units from refineries to distilleries. In early 1963 he took on an additional responsibility within MININD as head of personnel in the Consolidated Enterprise (Empresa Consolidada – EC) of Sugar. He was then promoted to director-general of personnel for the whole ministry. In late 1963 he became director of production in the Light Mechanics branch, responsible for nine ECs. In 1965 he moved over to become director of production in the Textile and Leather branch, with seven ECs.

Arcos was pivotal to the introduction of voluntary labour within industry, and in this capacity he became one of very the few individuals whom Guevara publicly commended by name for his initiative and enthusiasm in promoting moral incentives.

In 1965, he passed over to the Ministry of Sugar (MINAZ) to work under Orlando Borrego (see below), as director of Agronomy and Transport (MINAZ possessed more railway tracks and various other means of transport than the Ministry of Transport). He continued to work within MINAZ in various positions until his retirement in 1992. In 1993, he was a co-founder with several other veterans from MININD of the Consultancy of the National Association of Economists and Accountants (Consultoría de la Asociación Nacional de Economistas y Contadores – CANEC), where he remains as supervisor and head of accounting. He is the author of *Evocando al Che* (2007).

Orlando Borrego Díaz

Orlando Borrego was born in 1936 to a politicised peasant family who identified with the Orthodox Party (Partido Ortodoxo), a progressive, anti-corruption party set up in 1947 and led by Eduardo Chibás until his suicide in 1951.² Borrego participated in the secondary school students rebellion against Batista's coup in 1952 and became a member of the Movement led by Fidel Castro before the attack on Moncada Barracks on 26 July 1953 which gave the movement its name: 26 July Movement (Movimiento

26 de Julio – M26J). When Che Guevara's Rebel Army column arrived in the Escambray Mountains in central Cuba in October 1958, Borrego joined them, becoming a first lieutenant. Having studied for two years in the School of Commerce, qualifying as an accountant, he was asked by Guevara to take charge of the economic administration of La Cabaña which became a base for the Rebel Army after they entered Havana in January 1959.

In early October 1959, Borrego went to the Department of Industrialisation set up within INRA as Guevara's deputy. When Guevara became President of the National Bank in late November 1959, he left Borrego running the Department of Industrialisation, which grew with the nationalisations of industry. In February 1961, when Guevara became Minister of Industries, Borrego was named first as Vice Minister of Basic Industries and then First Vice Minister, dealing with the daily management of the ministry. Borrego was part of Guevara's inner circle of vice ministers and advisors and one of a small group involved in weekly reading seminars of Karl Marx's *Capital*.

In June 1964, Borrego left MININD to become head of Cuba's first Ministry of Sugar (MINAZ), employing the Budgetary Finance System (BFS) of economic management in MINAZ. In April 1965, Guevara left Cuba to fight in the Congo, leaving behind his three volumes of Marx's *Capital* for Borrego with a note that read: 'Borrego, this is the source, here we learnt everything together, in fits and starts, searching for what is still barely intuition ... Thank you for your firmness and your loyalty. Let nothing separate you from the course. A hug, Che.'

When Guevara wrote his critical notes on the Soviet *Manual of Political Economy* in Prague in 1965–66, he sent them back to Borrego to guard in Cuba. In 1966, Borrego met up with Guevara, who had entered Cuba in secret and was preparing a group of guerrillas for the campaign in Bolivia. During this period Borrego edited the first compilation of Guevara's writings and speeches.

A report by the British embassy in Havana, *Top Personalities in Cuba*, in September 1967 described Borrego as 'a serious and rather intense young man' and stated that 'Public appearances are fairly rare, but he seems to have a distinct ability for organising in a quiet and efficient manner.'³

Today, Borrego is advisor to the Minister of Transport. He is the author of *Che: El Camino del Fuego* (2001), *Che, Recuerdos en Ráfaga*, (2004) and *Rumbo al Socialismo* (2007).

Juan Borroto

A member of the Orthodox Party before Batista's coup, Juan Borroto worked in the Cuban Institute for the Stabilisation of Sugar (Instituto Cubano de Estabilización de Azúcar – ICEA) which represented landowners and the big sugar industrialists. He was also a clandestine member of the M26J in Havana. He began working with Guevara on 5 January 1959 when the Argentinian met with him and three other members of an M26J cell in the ICEA to find out about the structure of the sugar industry. Borroto joined a group preparing the Agrarian Reform Law, which was promulgated in May 1959. The law created INRA and Borroto was involved in planning the function and organisational structure of that institute. When the Department of Industrialisation was set up in October 1959, he became head of the Section for Inspections, taking over from Edison Velázquez (see below) after he was dismissed from the post. In February 1961 with the establishment of MININD, he became head of the Department of Supervision, which was turned into the General Office of Inspection in 1964.

In 1966, he moved to be director of inspections in the Ministry of Food, and in 1971 he became director of inspections in the Ministry of Domestic Trade, where he remained until his retirement in 1990.

Francisco Buron Seña

Before the Revolution, Francisco Buron Seña was a member of a civilian cell of the M26J in Havana. He joined the Department of Industrialisation responsible for the economics and finances in the Chemical Consolidate. In February 1961 he became head of the section for auditing within the Department of Supervision in MININD. During this time, he joined Guevara's *Capital* seminars and continued to attend even after he left MININD in October 1963 to manage domestic trade within the Central Planning Board (JUCEPLAN). In October 1964 he was promoted to Vice Minister of the Treasury Ministry, until it was merged with the National Bank at the end of 1965, when he transferred to work in economics at the Ministry of Fishing. At the end of 1968 he became director of operations in the Ministry of Light Industry until 1996, when he moved to CANEC (see Arcos above) as a general director. Today he is a member of the National Committee of the National Association of Economists and Accountants, of which CANEC is part.

Eugenio Busott

Eugenio Busott was born into a poor family in San Felipe in Oriente (eastern) province. He became politicised through involvement in a local campaign of Cuban bean producers demanding government protection from the ruinous impact of cheap US imports. He went to Havana to study English in order to get employment in a US corporation. He became involved in the revolutionary struggle through contacts from the M26J in Havana who asked him to carry malaria medicines to the Rebel Army in Oriente. He witnessed soldiers in Batista's army committing atrocities in the final period before their defeat.

At the time of the Revolution he was employed in the Cuban American Sugar Mill and he began working undercover for the investigations department of the Rebel Army. The company was nationalised, but following a workplace dispute, Busott was dismissed. He wrote to Guevara to complain at this treatment and two inspectors from the EC of Sugar investigated the situation. Consequently, he was invited to Havana to work in MININD with the EC of Sugar as an assistant to the provincial delegates for Havana and Pinar del Río in the west of the island, responsible for 22 sugar mills and ten distilleries. He was promoted as assistant to the director of the EC of Sugar, Alfredo Menéndez (see below). In 1964, he was invited to work alongside Borrego as director of general services in charge of MININD's provincial delegations and the nationwide Committees for Local Industry (CILOs). In this post he participated with Guevara on several investigative projects. Busott died in Havana in August 2008.

Juan Alberto Castellanos Villamar

Born in 1936, Alberto Castellanos joined the Rebel Army in the Sierra Maestra in 1958, earning a reputation for rebelliousness and indiscipline. He came under Guevara's command as a member of what became known as the 'suicide squad', famous for its dangerous and audacious military assaults, ending the struggle as a first lieutenant and Guevara's driver and one of the small group of young comrades-in-arms who served

as bodyguards. In 1959, Castellanos hosted Guevara's marriage to Aleida March, a revolutionary leader of the M26J in Las Villas province.

In 1959, Guevara organised a teacher for Castellanos and the other bodyguards to give them classes while they waited around for him to leave his office. In 1960 he was among the underqualified revolutionaries who took up management positions during the nationalisations of industry, becoming the administrator in a textile factory in Havana. To continue his studies, Castellanos enrolled in MININD's intensive School for Administrators in 1962. In August 1963, he signed up for a military campaign in Argentina where he was to lead the armed group until Guevara arrived to take the command. The nascent guerrilla campaign was destroyed by April 1964, and Castellanos was captured and imprisoned in Argentina until 1968 when he made a long journey back to Cuba after Guevara's death. He continued his military career, fighting in Angola in 1978–79 and going to Nicaragua as a military advisor in 1982.

Faure Chomón Mediavilla

As a student during Batista's coup in 1952, Faure Chomón was a co-founder and chief of military operations of the Revolutionary Directorate (Directorio Revolucionario – DR), which carried out the abortive attack on the Presidential Palace in March 1957. Chomón was among the few students who escaped alive, going into exile. In February 1958 he returned to Cuba from Florida in a yacht and set up a guerrilla command in the Escambray Mountains, cooperating with Guevara's column when it arrived in the region from the east and liberating Trinidad in central Cuba with his own forces during the push towards Havana.

Between 1960 and 1962, Chomón was Cuba's ambassador to Moscow. He returned as Minister of Communications, switching to Minister of Transport in late 1963. He was also a member of the government's Trade Union Commission. From 1967, he became a member of the Secretariat of the Central Committee of the new Cuban Communist Party and sat on its Economic Commission.

Alexis Codina Jiménez

Before the Revolution, Alexis Codina Jiménez began working in a factory at the age of 14 whilst studying at night in the School of Commerce. His contributed to the revolutionary movement by buying bonds sold by the M26J to raise funds for armaments.

In 1959 he began working for Prensa Latina, a continental news agency set up by Guevara with Argentinian Jorge Ricardo Masetti and Uruguayan Carlos María Gutiérrez, meanwhile continuing to study accounting. In 1961 he volunteered to work as an accountant in a bakery. By the end of the year he was promoted to head of the Accounts in the EC of Flour in MININD.

With the partition of MININD, he moved to the new Ministry of Foodstuffs (Ministerio de Alimenticia – MINAL) as head of prices, before transferring to the Economic Research Teams set up by Fidel in 1965 which were subsequently incorporated into the School of Economics in 1970. He has held a deanship and been vice rector at the University of Havana, and from 1989 to 1992 was a member of the Scientific Council of the Institute of International Research into the Problems of Management based in Moscow. Today, he is director of the Centre for Studies into Management

Techniques. Among his many published articles is 'Worker Incentives in Cuba', in the journal *World Development* (1987).

Rosario Cueto Álvarez

Rosario Cueto Álvarez's father was a leftist who arrived from Spain at the age of 17 to work first as a cane cutter and then as a cabinet maker. She was born in 1941 and supported the revolutionary movement in her early teens, working with Socialist Youth (Juventud Socialista), the youth wing of the Popular Socialist Party (Partido Socialista Popular – PSP), helping to compile and distribute their clandestine literature. Her brother was an activist and worked undercover in the US Cuban Electric Company. Months before the end of the dictatorship, Cueto began to work in a distribution company for hardware and stationery materials, but in 1959 she obtained work in the Department of Industrialisation in INRA through a PSP contact, keen to contribute to the tasks of the new revolutionary government. She worked as an accounting assistant and then as secretary to Borrego, who was managing the Department of Industrialisation on a daily basis while Guevara was at the offices of the National Bank.

When MININD was created in 1961, she continued to work with Borrego in his role as Vice Minister of Basic Industry then First Vice Minister, as well as being an office manager to other vice ministers. She was a militant of the trade union movement and the Union of Young Communists (Unión de Jóvenes Comunistas – UJC) in MININD, helping to mass mobilise for voluntary labour on Sundays. When MININD began to split up she went to the Ministry of Basic Industry as office manager to the vice minister. Since then she has worked in numerous ministries and enterprises in many sectors of the Cuban economy, and continues to work today as a trade specialist in CUBALSE, a tourism enterprise.

Miguel Ángel Duque de Estrada Ramos

Born into a wealthy family in Havana and a lawyer by profession, in the 1950s Miguel Ángel Duque de Estrada Ramos participated in the urban underground movement before joining the guerrillas when they reached the Escambray Mountains in central Cuba. He became judge or advocate of Guevara's Rebel Army column, enforcing the guerrilla's legal code in rebel-held territory. In January 1959, when the troops took over La Cabaña military fortress in Havana, he was designated President of the Commission for Investigation and Purges – preparing and presiding over the trials and executions of Batista's military forces accused of torture, assassinations and other crimes.

From late November 1959, he was an assistant to Guevara in the National Bank of Cuba. When the Ministry of Industries was created, he became the director of administration and head of the Office of Special Issues, working directly under Guevara's instructions. One area where he played a key role was in the Commission for Mechanisation, which initiated a project for the mechanisation of the sugar harvest.

Omar Fernández Cañizares

As a medical student and university activist in Santiago de Cuba, in 1956 Omar Fernández Cañizares was elected President of the School of Medicine in the University of Havana, when José Antonio Echeverría was President of the Federation of University Students (Federación de Estudiantes Universitario – FEU). Fernández Cañizares flew a plane-load of armaments to the Sierra Maestra, becoming a captain in the Rebel

Army. In April 1959 he organised an exhibition of Cuban produce in Havana, later taking the exhibit to New York. Between June and September 1959 he joined Guevara on his trade mission to non-aligned countries, returning to be director of Customs. He was a member of the military defence operation in Pinar del Río under Guevara's command in 1960–61. Later he led the rearguard in the campaign against the counter-revolutionary forces in the mountains in central Cuba. With the creation of MININD in February 1961 he became Vice Minister of Light Industry, before being promoted to Minister of Transport in 1962. He returned to MININD in 1964 as an 'investor' in the kenaf industry. Following Guevara's departure, he moved to the Medical Services in the Ministry of the Revolutionary Armed Forces (Ministerio de las Fuerzas Armadas Revolucionarias – MINFAR) and was head of Medical Services in Angola. Since then he has worked in various enterprises in the Ministry of Agriculture (Ministerio de Agricultura – MINAG) and the Ministry of Foreign Trade (Ministerio del Comercio Exterior – MINCEX). He is the author of *Un Viaje Histórico con el Che* (2005).

Yolanda Fernández Hernández

From a peasant background, Yolanda Fernández Hernández's father worked as train driver and her mother as a seamstress. She went to Havana at an early age to look for employment. She worked in retail, while studying at night in the School of Commerce. During the revolutionary struggle she was linked to the DR, the armed group emerging out of the FEU.

From 1959, she began work in the Customs Department in the port of Havana with Omar Fernández Cañizares, joining MININD at its foundation in February 1961 in the investigations department of the Vice Ministry of the Economy. She moved to the investment programming team in the Vice Ministry of Industrial Construction and then to the management of Inspections and Auditing in the Department of Supervision with Borroto. She was a trade union and UJC leader and took over responsibility of voluntary labour from Ángel Arcos Bergnes. After Guevara's departure, Fernández went on to direct several factories until she retired.

Miguel Alejandro Figueras

In 1959, Miguel Alejandro Figueras worked in a bank and studied economics at evening classes in the Catholic University. He left the bank to lead a department in the Economic Council which became JUCEPLAN in 1960. In early 1963, he responded to a request from Guevara for an economist to work in MININD and transferred there as the director-general of the Perspective Plan. He became a subeditor of *Nuestra Industria Económica*, the ministry journal for accountants and economists. He taught in the School of Economics set up in the University of Havana in 1962. In 1964, he joined Guevara in a course of probability and theories of information and worked on the input–output matrix with two other specialists in an attempt to maximise productivity in industry. Today, Figueras is an advisor in the Ministry of Tourism.

Luis Gálvez

At the time of Batista's coup in 1952, Luis Gálvez was a secondary school student in Santiago de Cuba and worked in a museum in the city. His first rebellion was to steal a coat which Batista had given to the museum and burn it at José Martí's tomb. He entered university to study chemical engineering, becoming the Vice President of

the FEU in Oriente province and a leader in the M26J urban underground, and he participated in the uprising in Santiago de Cuba on 30 November 1956, which was supposed to coincide with the landing of the Granma boat carrying Fidel Castro, Guevara and eighty other combatants. In 1957, he became the provincial organiser in Oriente of the National Student Front (Frente Estudiantil Nacional – FEN), set up by M26J to organise student resistance to Batista. He visited Fidel Castro in the Sierra Maestra to coordinate strategies. After the Revolution Gálvez remained in the leadership of the M26J in Santiago de Cuba and was involved in the university reform movement, which brought him into contact with Guevara for the first time.

In 1961, he became the administrator at a cement factory in Santiago and was promoted the following year to director of the EC of Cement in MININD. Between 1963 and 1968 he was director of the Nícaro nickel plant, one of the most advanced and complex industries in Cuba. Following one of his frequent visits to the plant, Guevara described Gálvez as ‘the administrator of the future’. In 1968–70 he joined a group managing new investments in Cuba’s nickel plants, and in late 1969 he became the director of industrial engineering within MINAZ. In 1973 he moved to the Cuban Institute for Research into Sugar Cane Derivatives, set up by Guevara ten years earlier. He remains director there today, and during the interim period he has also worked within MINAZ as director of science and technology and Vice Minister of Development.

Armando Hart Dávalos

Born in Havana in 1930 as the son of a distinguished lawyer, Armando Hart studied law at the University of Havana from 1947. He was a member of the Orthodox Party and the FEU and campaigned against the corruption of the government. Following Batista’s coup in March 1952, he joined the Revolutionary National Movement (Movimiento Nacionalista Revolucionario – MNR) and gained national prominence as the defence lawyer of its leader, Rafael García Bárcena, after his arrest in 1953. In June 1955, he founded the M26J with Fidel Castro, and as a member of its National Directorate he was instrumental in preparing to launch the armed struggle in 1956. He participated in the uprising in Santiago de Cuba in November 1956 and was a leader of the urban wing of the M26J. According to the 1967 British embassy in Havana report, *Top Personalities in Cuba*, he ‘Made a name for himself in 1957 when, charged with a number of other students for conspiring against the Batista regime, he made a spectacular escape from the courtroom.’⁷⁴ When the National Coordinator of the M26J, Frank País, was murdered, Hart took over this position. On return from a visit to Fidel Castro in the Sierra Maestra in January 1958, Hart was arrested by Batista’s forces and remained in prison on the Island of Youth until the prisoners seized control of the gaol and liberated themselves on 1 January 1959, taking control of the island as the dictatorship collapsed.

He became Minister of Education in the first revolutionary government, directing the literacy campaign in 1961, remaining there until 1965. He was a member of the National Directorate first of the Integrated Revolutionary Organisations (ORI), then the United Party of the Socialist Revolution (PURS) and then the organisational secretary of the Central Committee of the Cuban Communist Party (CCP) from its formation in 1965 until 1970. In 1970–76 he was the CCP’s first secretary in Oriente, until the Ministry of Culture was created in 1976, with him as minister. He remained there until 1997 when he set up the José Martí Cultural Programme. He is the author of numerous articles and books, including *Aldabonazo: Inside the Cuban Revolutionary*

Underground 1952–58: A Participant's Account (2004), and most recently *Marxism and The Human Condition: A Latin American Perspective* (2008).

Joaquín Infante

Born in Havana, Joaquín Infante graduated from Havana University as a public accountant in 1950 and worked in the Court of Accounts which supervised the state finances. With the Revolution in 1959 he continued this line of work. In March 1959, he was among a team of public accountants, supporters of the revolution, who 'intervened' in the US-owned Cuban branch of the International Telephone and Telegraphy Company to investigate irregularities in its operations. This was the first business to be nationalised, and Infante and his colleagues were then incorporated into the Ministry of Embezzled Goods, which confiscated the properties of Batista collaborators.

Later in the year he went to the Treasury where he worked as a manager of accounts, incomes and financing. In 1963, he moved to INRA to work as director of finance and prices with Carlos Rafael Rodríguez who was implementing the Auto-Financing System (AFS) of economic management, similar to that employed in the USSR. In this context, Infante engaged in the Great Debate as a proponent of the AFS and opponent of Guevara's BFS. The debate ended with Guevara's departure in 1965, and Infante went on to the Ministry of Foreign Trade as director of hard currency and prices. In 1970 he went to the Ministry of Light Industry as director of the economy. In 1976 he worked as director of the budget in the Ministry of State Finances, until 1991. Today, he is an advisor in CANEC, alongside some of Guevara's compañeros – supporters of the BFS.

Juan Raimundo Jiménez Velo

Juan Raimundo Jiménez Velo began working in the National Bank of Cuba (NBC) in 1953 at the age of 27. By 1959 he had been there for six years carrying out 'sensitive' work as the head of inspections. He supported the revolution and bought and sold bonds for M26J and provided a safe house following the failed strike of April 1958. In the first days of January 1959, he was sent to the Bank of Economic and Social Development (set up by Batista) to maintain control in the wake of the Rebel Army take over and went on to assist in the Bank of Social Security at the end of 1961. He returned to the NBC after Guevara had left. From 1995 when the NBC was divided into several separate banks, he took the post of treasurer in the Bank of Credit and Business and remains there today.

Martha Lugioyo

Marta Lugioyo was a lawyer when Batista seized power, and in 1955 she joined the underground movement in Las Villas province, working closely with Aleida March, who later married Guevara. In 1957 she became a judge and used her position as a cover to help the revolutionary movement. In January 1960 she was sent to the Cuban embassy in Mexico for almost a year and a half. On her return she became office manager in the Vice Ministry of Light Industry in MININD, moving on to the Commission of Arbitration when it was set up in 1963 and reporting directly to Guevara and to Santiago Rieras, Vice Minister of the Economy. In 1966, the Commissions in each ministry were centralised into a National Commission of Arbitration, and Lugioyo

was appointed onto that. Later she returned to her work as a judge in the Ministry of Justice. Since retiring, she has worked as the secretary of her regional CCP branch for over a decade.

José Luis Puñales

A factory worker and taxi driver in Havana in the 1950s, José Luis Puñales was a militant in the urban M26J movement, taking part in the general strike in April 1958 in which most of his *compañeros* were killed or arrested. In the first days of January 1959, he was among the urban revolutionaries who seized control of key institutions and disarmed the police in the capital city. He helped to organise the National Revolutionary Militias whilst attending the School of Commerce and took part in the military defence of the Island of Youth during the Bay of Pigs invasion. On return, he attended the School for Political Commissars, first as a student and then as a teacher. In 1962, he joined MININD as the administrator of a brewery which had belonged to the Bacardi Corporation. In 1963, he managed a beer factory in Santiago de Cuba, preparing for the important summer celebrations there to commemorate ten years since the attack on Moncada Barracks which launched the M26J. He was promoted in late 1963 to director of the EC of Beer until a new Ministry of Foodstuffs was created, and Puñales was transferred there as a director. Today he works at CANEC with the other *compañeros* from MININD.

Norma Marrera

In 1950, Norma Marrera was a student in the Institute of Vedado in Havana. She participated in the revolutionary movement as a member of the FEU. In 1959 she began studying at the University of Havana and participated in the student militias. She became a member of the UJC in 1962, when she also started work in the central library of the university. She joined MININD in 1964, in the new Section for the Social Psychology of Work set up within the Department of Psychology and headed by an Argentinian psychologist Raquel Hoffman. When MININD was divided, Marrera transferred to the Ministry of the Interior and joined the sociology commission of the Central Committee of the CCP. After a year, she transferred to the Electricity Enterprise within the Ministry of Basic Industry, where she remained for 24 years until she retired.

Alfredo Menéndez

Alfredo Menéndez had begun cooperating with the PSP in 1943. Employed at the ICEA in Havana, he was secretly passing strategic information about the big sugar companies to the PSP. In October 1958, Menéndez sent his own books about the Cuban economy to Guevara in the Escambray Mountains, from where he had requested the information. His close personal collaboration with Guevara began in the first days of January 1959 at the age of 37, when they met to discuss the sugar industry, along with the other members of the M26J cell in the ICEA. He participated in drafting the Agrarian Reform Law, promulgated in May 1959, before carrying out an investigation about the potential for sugar-based trade with non-aligned countries which formed the basis of Guevara's trip between June and September 1959. Menéndez participated in the trip as an economic advisor, playing an additional secret role in initiating trade negotiations with the USSR. Sacked from the ICEA on his return, he began to work with the sugar mills confiscated by the Ministry of Embezzled Goods, moving on to the Department

of Industrialisation once it was set up in October 1959 and then to MININD from February 1961. Menéndez was director of the EC of Sugar, which accounted for half the ministry's workforce. He also headed the Commission for Mechanisation, initiating the mechanisation of the sugar harvest.

Nury Cao

In the 1950s, Nury Cao was a student of a university in Las Villas province until it was closed by the Batista dictatorship. She participated in the student movement and bought bonds for the M26J. In 1959 she went to Havana University to study sociology and worked as a teacher in a primary school. She joined MININD in August 1963 as a special assistant to Dr del Cueto, director of the Department of Psychology, and remained in the Ministry of Basic Industry until 1976.

Enrique Oltuski Osacki

Born in Cuba in 1930 to a family of Polish Jewish immigrants, Oltuski was taken to Poland at the age of one, returning to Cuba again at the age of five and unable to speak any Spanish. Once in a Cuban school, Oltuski developed a strong sense of *Cubanidad* (Cuban identity and national pride). The family lived in Santa Clara where his parents' business prospered. Oltuski wanted for nothing, bothered only by the grinding daily poverty around him and the sight of women sleeping in the park with their children.

He studied architecture at a university in the US before working for a couple of years as an architect in Florida, with the intention of returning to Cuba to set up his own business. Returning to the island on holiday following Batista's coup, he was drawn into the revolutionary struggle against Batista's dictatorship, joining first the MNR and when that dissolved, the M26J in Havana. He left the US to take an active role in the struggle. On return to Cuba he was employed in the Technical Department at Shell Oil, entering the exclusive Rotary Club and cultivating an image as a promising young entrepreneur as a cover for his revolutionary activities.

When Shell Oil sent him to Santa Clara in central Cuba, as the technical head of Las Villas, he became responsible for the M26J in the province, earning the *nom de guerre* 'Sierra'. He provided a vital link between Guevara, who arrived with his Rebel Army column in the Escambray Mountains in central Cuba in October 1958, and the urban movement. Despite some initial disagreements about strategy, this developed into a close collaboration between Oltuski and Guevara throughout his years in Cuba.

Oltuski was one of three representatives of the M26J to enter the Council of Ministers in the first government in January 1959 as Minister of Communications. In mid 1960, he joined the Department of Industrialisation to work with Guevara as the director of organisation, helping to create the operational shell of the BFS, before moving to the Central Planning Board (JUCEPLAN) as vice minister. Today he is the vice minister of the Ministry of Fishing. He is the author of *Gente del Llano* (2000) which was translated into English as *Vida Clandestina: My Life in the Cuban Revolution* (2002), and *Pescando Recuerdos* (2006).

Jorge Risquet Valdés

Jorge Risquet's parents were semiliterate tobaccoists who worked in a politicised workers' collective. At the age of 13, Risquet joined the youth wing of the PSP, the Socialist Youth.

During the dictatorship Risquet worked in the urban underground in Havana, before joining the Rebel Army teaching revolutionary principles in a training school in Raúl Castro's Second Front. On 1 January 1959, he entered Santiago de Cuba with Raul and Fidel Castro's troops and became the head of the Culture Department of the Revolutionary Armed Forces (FAR) in Oriente, responsible for political education. He carried out numerous political roles in Oriente between 1959 and 1961, and was head of army operations in Oriente. In August 1961 he represented Cuba at the World Youth Festival in Moscow and Berlin.

Between 1962 and 1965 he was organisational secretary of the PURS in Oriente province. In late July 1965, Fidel Castro revealed to Risquet that Guevara was involved in a military campaign in the former Belgian Congo and invited Risquet to lead a simultaneous intervention in the French Congo, responding to a request from the president, Alphonse Massamba-Débat, who believed that the country's recent independence was under threat. The Cubans began training fighters from the MPLA (Popular Movement for the Liberation of Angola), Angolan independence fighters, initiating the political and military cooperation which would culminate in Cuba sending tens of thousands of troops to fight the South African occupation of Angola and ultimately ending the occupation of Namibia. Risquet sailed to the French Congo in August 1965 with 260 Cuban soldiers on a legal mission of military assistance. On this return to Cuba in January 1967, Jorge Risquet became Minister of Labour, responsible for implementing Guevara's salary scale. He is the author of *El Segundo Frente del Che en el Congo* (2000).

Jorge Ruiz Ferrer

A member of the Orthodox Party and a student of architecture at the University of Havana when Batista carried out his coup in March 1952, Jorge Ruiz Ferrer was active in Havana, preferring to join to the M26J cell where he lived because it was engaged in armed struggle, unlike the student groups. Ruiz went on to play a key role, organising the captains of the clandestine movement and preparing them to take over Havana as the Rebel Army approached. By the time Guevara and Camillo Cienfuegos led their troops into Havana at dawn on 3 January, the urban revolutionaries had the city under control.

In the following months, Ruiz became an assistant to Raúl Castro, investigating the educational level of his Rebel Army troops and was in charge of setting up the rural police force. At Guevara's request, he joined a team of six people who founded the Department of Industrialisation in INRA. As an architect, Ruiz took over construction of the grandiose building intended by Batista to house the National Bank of Cuba – today, the Almeida Hospital. He also worked with Guevara on establishing the Rehabilitation Centre at Guanahacabibes. He was head of operations of the militia in Havana. He entered MININD's Vice Ministry of Industrial Construction, as super-intendent for Oriente province. When MININD was divided, he became a vice minister in the Ministry of Minerals, Fuel and Metallurgy. Throughout this period Ruiz also worked closely with Fidel Castro on various projects.

María Teresa Sánchez

Born into 1935 to a family which supported the PSP and the Socialist Youth, María Teresa Sánchez was studying for a degree in librarianship in the 1950s. She joined the

student movement against Batista's dictatorship. On 8 January 1959 she helped set up the Literacy School in La Cabaña military fortress, teaching soldiers in Guevara's Rebel Army column. In late 1962 she joined MININD as director of scientific-technical information. She edited the ministry journal *Nuestra Industria Tecnológica*, a specialist journal for technicians and engineers. She was a militant of the UJC and a member of a group of musicians in MININD.

After Guevara's departure in 1965, she joined Cuba's Academy of Sciences. She also worked with INRA and joined a technical team set up by Fidel Castro. She then moved to the Cuban Book Institute as head of the Youth Department of the Gente Nueva publishing enterprise.

Tirso Sáenz

From a poor, musical family in Old Havana, Tirso Sáenz attended a Catholic School and became a leader in the Catholic Youth. He received a scholarship to study chemical engineering in Rensselaer Polytechnic Institute in Troy, New York, before returning to Cuba to work in a subsidiary of US company Procter & Gamble. He was sympathetic to the revolutionaries but he was not involved in the struggle. Following nationalisation of the company in October 1960, his employees offered him a new job in Cincinnati, Ohio. He had trouble getting a visa and decided to stay in Cuba.

In February 1961, he became vice director of the petroleum industry within MININD. He was promoted to director of the Energy Sector, then took over as Vice Minister of Basic Industries when Borrego became first vice minister. In 1963 he became Vice Minister of Technical Development, responsible for six research and development institutes and the Office of Automation and Electronics. He was also responsible for the Department of Psychology, the Department of Scientific-Technological Information, Documentation and Training throughout the ministry. He studied higher maths with Guevara.

Today Sáenz is an Associate Senior Research Professor in the Centre of Sustainable Development at the University of Brasilia in Brazil. He is the author of *El Che Ministro* (2005).

Juan Valdés Gravalosa

As a lawyer who supported the revolutionary struggle in 1959, Juan Valdés Gravalosa joined the Ministry of Embezzled Goods before moving into INRA as a legal consultant. With the creation of the Department of Industrialisation in October 1959, Valdés Gravalosa began his years of working alongside Guevara as the secretary of the Management Council and a legal advisor – maintaining the same role in MININD until Guevara's departure. In addition, he edited the ministry's journal *Nuestra Industria* which had a monthly print run of 35,000, and he was in charge of a small team of specialist advisors. When Guevara left, Valdés Gravalosa became Cuba's Attorney-General.

Edison Velázquez

Edison Velázquez was born to poor parents in the countryside in the east of the island in 1931. Their situation improved through farming and he was sent to a Methodist college in Havana to study a degree. He was a keen athlete, and when his economic situation deteriorated with his father's death, he paid for his studies by teaching Physical

Education at the college. There he joined the student movement linked to the Orthodox Party. When Batista's regime closed the universities, he returned to Oriente where he made a living roasting and selling coffee. He became the member of a M26J cell before setting off to join the Rebel Army when the Fourth Front opened up under Delio Gómez Ochoa in October 1958.

In Havana in 1959, he first worked at the ICEA with Menéndez before joining Guevara as a founding member of the Department of Industrialisation in October, first as head of inspections in the Department of Industrialisation. He was removed following an anonymous complaint against him and was sent by Guevara to a hard labour camp in Cayo Largo. On return to Havana, Velázquez became the Department of Industrialisation's delegate in Las Villas. In 1963, Velázquez was promoted to director of the EC of Nickel, an industrial sector which Guevara prioritised.

Harry Villegas Tamayo

Born in 1940 to a poor peasant family in Yara, on the foothills of the Sierra Maestra, Harry Villegas' brother was an activist in the Orthodox Party. In 1954, at the age of 14, he supported the revolt against Batista's dictatorship. On its foundation in 1955, he joined an underground cell of the M26J, until in early 1958 he set off with a group of friends into the mountains to join the Rebel Army. As a member of Guevara's column which set off for central Cuba, Villegas became a squad leader and one of his bodyguards and confidants.

In Havana in 1959, Villegas continued as the head of Guevara's bodyguards (studying with Castellanos) and lived with Guevara throughout his years in Cuba. In 1960 he became an intervening administrator at a Cuban-Mexican mixed enterprise within the Department of Industrialisation and then MININD, and in 1962 he attended the School for Administrators. After graduating, he returned to the army as head of Personnel and Cadre in the west of the island and joined the commission for the construction of the new Cuban Communist Party. In 1965, he was one of a small group of Cubans who went to fight with Guevara in the Congo, taking the *nom de guerre* 'Pombo'. In 1966 he went to Bolivia to form part of Guevara's *foco* force there. He was one of the few guerrillas to escape alive in October 1967 when Guevara himself was shot, captured and executed. Since then he has continued to work in MINFAR and was a military advisor in Angola and Nicaragua. He is one of the few individuals granted the title 'Hero of the Revolution' and is the author of *Pombo, un hombre de la guerrilla del Che* (1996).

Mario Zorrilla

Mario Zorrilla had worked as a publicist for US companies in Cuba. He was also a member of the Socialist Youth and in 1958 went to work with Segismundo Pons who owned a mechanics workshop and was a financial contributor to the PSP. Pons approached Guevara in the Department of Industrialisation and they agreed to run the business as a joint venture. Consequently, Zorrilla was invited to manage the Chemical Industry Consolidate in the Department from March 1960. His work was evaluated positively, so he was named as Vice Minister of the Economy with the foundation of MININD in February 1961. In early 1963 he moved over to work as a director in INRA, following a request from its director, Carlos Rafael Rodríguez, for three good managers from MININD. Zorrilla was instrumental in the reorganisation of INRA, reversing huge annual losses. In 1965, he went to study biology in the Academy of Sciences.

Notes

FOREWORD

1. Lenin, 'The Tax in Kind', reproduced in Meghnad Desai (ed.), *Lenin's Economic Writings*, London: Lawrence and Wishart, 1989, 29–30.

CHAPTER 1

1. Edward Hallet Carr, *What is History?*, Middlesex: Penguin, 1967, 83.
2. Carr, *What is History?*, 120.
3. Nelson P. Valdés, 'Revolution and Paradigms: A Critical Assessment of Cuban Studies', in Andrew Zimbalist (ed.), *Cuban Political Economy: Controversies in Cubanology*, London: Westview Press, 1988, 184. For a discussion of the politics of Cuba studies see Chapter 2 in Helen Yaffe, 'Ernesto "Che" Guevara: Socialist Political Economy and Economic Management in Cuba 1959–1965', PhD thesis, London: London School of Economics, 2007.
4. Commissioned by the Pentagon, the Rand Corporation published *US Business Interests in Cuba and the Rise of Castro* and *The Course of US Private Investments in Latin America since the Rise of Castro*. The American University published several studies together as *Case Studies in Insurgency and Revolutionary Warfare: Cuba 1953–1959*. This and following information from Cuban economist José Luis Rodríguez, 'The Antecedents and Theoretical Characteristics of Cubanology', in Zimbalist, *Controversies*, 22–32. Today Rodríguez is Cuba's Minister of the Economy and Planning.
5. For example, in 1982 Edward González, a researcher at the Rand Corporation and professor at the University of California, wrote in a study for the State Department and the US Armed Forces that 'there are now new opportunities for the United States to exploit Cuba's interests and weaknesses ... future transmissions of [the CIA's] *Radio Martí* may create an instrument for the exploitation of political vulnerabilities and for putting the regime on the defensive'. Cited by Rodríguez, 'Antecedents and Theoretical Characteristics of Cubanology', 29. For a critique of Samuel Farber, an example of the left wing of Cubanology, see Helen Yaffe, 'Samuel Farber – False Friend of the Cuban Worker', *Fight Racism! Fight Imperialism!* 198, August/September 2007.
6. The Institute for Cuban Studies, whose slogan is 'Cuba unites us on foreign soil', has involved key Cubanologists such as Carmelo Mesa-Lago, Jorge Domínguez, Sergio Roca, Jorge Pérez-López, Luis E. Aguilar and Marifeli Pérez Stale. From the late 1980s, non-Cubans could join. Today its website has links to counter-revolutionary organisations within Cuba. See <www.iecubanos.org>.
7. Recently this tenet has evolved into one about Cuba's dependency on Venezuela under President Hugo Chávez.

8. Rafael Hernández, 'Looking at Cuba: Notes Towards a Discussion', *Boundary* 2, 2002, 125.
9. Hernández, 'Looking at Cuba', 128.
10. An important example is the Cuba Research Forum, directed by Professor Antoni Kapcia in the University of Nottingham, whose directory of Cubanists covers everything from cultural history to economics and linguistics.
11. See the primary sources in the bibliography for details. Yaffe, 'Ernesto "Che" Guevara', contains a discussion in chapter 1 about the research procedure and, in the appendix, an evaluation of the sources consulted, and a list of the standard interview questions.
12. To limit the length of the references, one source is often cited in the notes even where more than one was consulted.
13. Jamie Suchlicki, *Cuba: From Columbus to Castro*, New York: Pergamon-Brassey's, 1986, 135.
14. C. Fred Judson, *Cuba and the Revolutionary Myth: The Political Education of the Cuban Rebel Army, 1953–1963*, Colorado: Westview Press, 1984, 95.
15. International Bank for Reconstruction and Development in collaboration with the Government of Cuba, *Report of the Mission to Cuba*, Washington, DC: Office of the President, July 1951, 11.
16. US Secretary of State John Quincy Adams wrote that Cuba, like a ripe apple, should gravitate naturally to the US if cut off from Spain. Cited by Philip Foner, *A History of Cuba and its Relations with the United States*, Vol. 1, New York: International Publishers, 1962, 145. Foner records the US proposal to buy Cuba from Spain in 1848 for \$100,000,000. Foner, *History of Cuba*, Vol. 2, 1962, 20–9.
17. Foner, *History of Cuba*, Vol. 2, 241.
18. US Department of Commerce, *Investment in Cuba: Information for United States Businessmen*, Washington, DC: GPO, July 1956, 9–10. The Platt Amendment was incorporated into US law and the new Cuban constitution in 1901, in return for granting Cuba 'independence'. It gave the US control over Cuba's international relations and public finances, established two military bases on the island and the right to intervene in Cuba when it wanted. Hero of the independence movement General Juan Gualberto Gómez said it 'reduced the independence and sovereignty of the Cuban Republic to a myth'. Cited by Richard Gott, *Cuba: A New History*, London, Yale University Press, 2004, 111.
19. M. Moreno Fraginals, 'Plantation Economies and Societies in the Spanish Caribbean, 1860–1930', in Leslie Bethell (ed.), *Cambridge History of Latin America*, Vol. 4, 1986, 190. For details about the sugar industry see Chapter 7.
20. US Department of Commerce, *Investment in Cuba*, 37. Foreign-owned mills were more productive.
21. US Department of Commerce, *Investment in Cuba*, 103.
22. US Department of Commerce, *Investment in Cuba*, 10.
23. Edward Boorstein, *The Economic Transformation of Cuba: A First Hand Account*, New York: Modern Reader Paperback, 1968, 6.
24. Jean-Paul Sartre, *Sartre on Cuba*, New York: Ballantine Books, 1961, 12.
25. Boorstein, *Economic Transformation of Cuba*, 6–7.

26. Quoted by Marifeli Perez-Stable, *The Cuban Revolution: Origins, Course and Legacy*, Oxford: Oxford University Press, 1999, 31.
27. US Department of Commerce, *Investment in Cuba*, 23–4.
28. Theodore MacDonald, *Hippocrates in Havana: An Analytical and Expository Account of the Development of the Cuban System of Healthcare from the Revolution to the Present Day*, Mexico City: Bolivar Books, 1995, 50.
29. US Department of Commerce, *Investment in Cuba*, 187.
30. US Department of Commerce, *Investment in Cuba*, 181, and MacDonald, *Hippocrates in Havana*, 59.
31. In Cuba this was a period of political upheaval: strikes and the establishment of workers ‘soviets’ in sugar mills throughout the island, culminating in the overthrow of General Gerardo Machado’s dictatorship with the Revolution of 1933 and the ‘Sergeant’s Revolt’ which bought Fulgencio Batista Zaldívar to the centre stage for the first time.
32. ISI tended to lead to huge expansions of debt and high inflation. The consequences of this policy in Cuba are examined in Chapter 7.
33. Sometimes translated as the ‘Self-Financing System’, the system is referred to throughout this book as the ‘Auto-Financing System (AFS)’, consistent with the translation used by Bertram Silverman, in his book *Man and Socialism in Cuba: The Great Debate*, New York: Atheneum, 1971, of the article by Joaquín Infante, ‘On the Operation of the Auto-Financed Enterprise’, 157–83. The Spanish term is *autofinanciamiento*.
34. Guevara, interview with Jean Daniels 1964, cited by Carlos Tablada Pérez, *Che Guevara: Economics and Politics in the Transition to Socialism*, 2nd edn, New York: Pathfinder, 1990, 77. A fuller citation appears in Chapter 3.
35. Quoted in Rose Leviné-Meyer, cited by David Reed, *Ireland – the Key to the British Revolution*, London: Larkin, 1984, xiii.
36. ‘Bourgeois historians had described the historical development of class struggle long before I came along, and bourgeois economists had laid bare the economic anatomy of this struggle.’ Karl Marx, ‘Letter to Weydemeyer’, 5 March 1852, cited by Ernst Nolte, ‘The Relationship between “Bourgeois” and “Marxist” Historiography’, *History and Theory* 14:1, February 1975, 66.
37. Guevara’s concept of ‘consciousness’ is explained in Chapter 8.
38. Eric Hobsbawm, *The History of Marxism*, Vol. 1, London: Harvester Press, 1982, vii–viii.

CHAPTER 2

1. Orlando Valdés, *Historia de la Reforma Agraria en Cuba*, La Habana: Ciencias Sociales, 2003, 2.
2. Edward Boorstein, *The Economic Transformation of Cuba*, London: Modern Reader Paperback, 1969, 1.
3. See Chapter 7 for details. Juan Noyola, head of the ECLA mission in Cuba, ignored the order to withdraw and remained there with several colleagues.
4. Boorstein, *Economic Transformation of Cuba*, 151.
5. Miguel Ángel Duque de Estrada Ramos, the lawyer who presided over the Commission for Investigations and Purges, preserved the list of names, charges, verdicts and sentences of the trials between January and June 1959: 560

- military trials with 54 death sentences. On 9 June 1959, military tribunals were transferred to civilian courts. Interview, 23 February 2005. Indicative of the prevailing dramatisation of the purge, Jon Lee Anderson cites 550 executions (not trials) between January and April 1959. *Che Guevara: A Revolutionary Life*, New York: Grove Press, 1997, 419.
6. Anderson, *Che Guevara*, 385 and 395.
 7. See Chapter 8 for details.
 8. C. Fred Judson, *Cuba and the Revolutionary Myth: The Political Education of the Cuban Rebel Army, 1953–1963*, Colorado: Westview Press, 1984, 249.
 9. See Lidia Turner Martí, *Ernesto Che Guevara y Las Universidades*, Habana: Félix Varela, 2003.
 10. Orlando Borrego Díaz, interview, 24 January 2005.
 11. PSP member Alfredo Menéndez sent his own books for Guevara. Interview, 11 February 2005.
 12. Juan Borroto, interview, 26 January 2006, and Menéndez, interview, 11 February.
 13. Both cited by Paco Ignacio Taibo II, *Guevara: Also Known As Che*, trans. Martín Roberts, New York: St Martín's Griffin, 1997, 277.
 14. Antoni Kapcia, *Island of Dreams*, Oxford: Berg, 2000, 114.
 15. Boorstein, *Economic Transformation of Cuba*, 15.
 16. Boorstein, *Economic Transformation of Cuba*, 47–8.
 17. See Ernesto 'Che' Guevara, 'Conferencia de prensa al regreso del viaje', 9 September 1959, and 'Comparencia en el programa "Comentarios Economicos"', 14 September 1959, in Omar Fernández Cañizares, *Un Viaje Histórico con el Che*, La Habana: Ciencias Sociales, 2005, 167–84 and 185–93.
 18. Omar Fernández Cañizares, interview, 2 March 2006.
 19. Fernández Cañizares, interview.
 20. Guevara, 'Conferencia', 171–2.
 21. Guevara, 'Comparencia', 185–7.
 22. Guevara, 'Yugoslavia, en pueblo que lucha por sus ideas', *Verde Olivo*, 26 November 1959, <<http://cheguevara.cubasi.cu>>.
 23. Carlos Tablada Pérez, *Che Guevara: Economics and Politics in the Transition to Socialism*, 2nd edn, New York: Pathfinder, 1990, 112.
 24. Menéndez, interview, 11 February. The need for secrecy reflected Cold War tensions more than the significance of trade negotiations – under Batista's regime in 1958, Cuba had sold 182,000 tons of sugar to the USSR, according to Samuel Farber, *The Origins of the Cuban Revolution Reconsidered*, North Carolina: North Carolina Press, 2006, 13.
 25. Fernández Cañizares, interview.
 26. Robert M. Bernardo, *The Theory of Moral Incentives*, Alabama: University of Alabama Press, 1971, 16.
 27. Orlando Borrego Díaz, email correspondence, 6 July 2007.
 28. Article 280 of Cuba's 1940 Constitution provided for the establishment of a national bank, but this was obstructed by US interests and domestic forces allied to them.
 29. US Department of Commerce, *Investment in Cuba: Basic Information for United States Businessmen*, Washington, DC: GPO, 1956, 14–15.

30. Julio César Mascarós, *Historia de la Banca en Cuba: 1492–2000*, La Habana: Ciencias Sociales, 2004, 110. According to Raúl Cepero Bonilla, the government found reserves of 50 million pesos in the National Bank on 1 January 1959. ‘El Canje de Billetes: Un Glope a la Contrarrevolución’, *Cuba Socialista*, Año 1, No. 2, Octubre 1961, La Habana, 44. Cepero Bonilla replaced Guevara as NBC president in February 1961, until his death in an airplane accident in 1962.
31. Information mainly from Mascarós, *Historia de la Banca en Cuba*, 109–21. One peso was exchangeable for one US dollar.
32. Jorge Ruiz Ferrer, interview, 5 April 2006.
33. US Department of Commerce, *Investment in Cuba*, 10.
34. Juan Raimundo Jiménez Velo, interview, 6 February 2006. Jiménez provided details of BANDES operations to demonstrate this point.
35. Jiménez, written submission, February 2006.
36. See Julia Sweig, Chapter 6 in *Inside the Cuban Revolution: Fidel Castro and the Urban Underground*, Cambridge, Mass.: Harvard University Press, 2002. In October 1957, Pazos signed the Miami Pact in the name of M26J without authorisation from the National Directorate. The Pact was condemned by Fidel Castro for placing control of the revolutionary movement in Miami.
37. Commercial banks stopped unusual account movements and access to vaults and security boxes was prohibited. On 28 January 1959, the Monetary Stabilisation Fund placed a 50-peso cash limit on all visitors, Cuban or foreign, entering the country.
38. Cepero Bonilla, ‘El Canje de Billetes’, 43.
39. In October 1960 Guevara announced: ‘Felipe Pazos is now in Puerto Rico occupying around fourth or fifth place in the leadership of the counter-revolution. Of course, the doctor Carrillo is also there and also has a place in the same “rating”’. ‘Intervención en el Ciclo de Conferencias del Banco Nacional’, 20 October 1960, in *Escritos y Discursos*, Vol. 4, La Habana: Ciencias Sociales, 1977, 215.
40. Hugh Thomas, *Cuba: Or the Pursuit of Freedom*, London: Eyre and Spottiswoode, 1971, 1252.
41. Thomas, *Cuba*, 1252.
42. Fidel Castro, speech at the sugar workers’ plenary, December 1959. Cited by Orlando Borrego Díaz, *Che: El Camino del Fuego*, La Habana: Imagen Contemporánea, 2001, 14–15.
43. Cited by Anderson, *Che Guevara*, 447.
44. Salvador Vilaseca, unpublished interview with Tatiana Martínez Hernández, Havana, 1994.
45. Jiménez, interview.
46. Vilaseca, interview.
47. Guevara, ‘Discurso en el Banco Nacional’, 29 January 1960, in *Escritos y Discursos*, Vol. 4, 67.
48. John Gerassi (ed.), ‘Introduction’, *Venceremos! The Speeches and Writings of Che Guevara*, London: Panther, 1969, 41.
49. Jiménez, written submission.
50. Boorstein, *Economic Transformation of Cuba*, 31.
51. Boorstein, *Economic Transformation of Cuba*, 62–5.
52. Mascarós, *Historia de la Banca en Cuba*, 113.

53. The lack of financial reserves made cash compensation impossible. The government may have believed the bonds acted as an incentive to expropriated owners to urge the US government not to cut the sugar quota, which would inevitably annul the possibility of compensation.
54. Law 851, Resolution 2, 17 September 1960, cited by Mascaros, *Historia de la Banca en Cuba*, 114–15.
55. Guillermo Jiménez details these links – for example, between the Bank of Boston and the United Fruit Company which owned two of the largest sugar mills in Cuba – in *Las Empresas de Cuba 1958*, La Habana: Ciencias Sociales, 573–4 and 595–7.
56. Mascaros, *Historia de la Banca en Cuba*, 115.
57. Two Canadian banks, the Royal Bank of Canada and the Bank of Nova Scotia, were not nationalised until several months later. The credit institutions affected were: BANFAI, the National Finance Bank of Cuba, the Cuban Bank of Foreign Trade (BANCEX), BANDES and the Assured Mortgages Fund.
58. Figures cited by Mascaros, *Historia de la Banca en Cuba*, 117.
59. Guevara, 'Intervención en el Ciclo de Conferencias', 216.
60. Boorstein, *Economic Transformation of Cuba*, 145.
61. Cepero Bonilla, 'El Canje de Billetes', 46–7.
62. Mascaros, *Historia de la Banca en Cuba*, 119.
63. Cepero Bonilla, 'El Canje de Billetes', 46.
64. Jiménez, interview.
65. Vilaseca, interview.
66. Jiménez, interview.
67. Cepero Bonilla, 'El Canje de Billetes', 44.
68. Mascaros, *Historia de la Banca en Cuba*, 120.
69. Rosario Cueto Álvarez, interview in Havana, 20 March 2006.
70. Law 963, 4 August 1961, cited by Mascaros, *Historia de la Banca en Cuba*, 120.
71. This affected just 0.2 per cent of the 1,768,144 people who changed banknotes. Cepero Bonilla, 'El Canje de Billetes', 50.
72. Cepero Bonilla, 'El Canje de Billetes', 52.
73. Cepero Bonilla, 'El Canje de Billetes', 49.
74. Fidel Castro, *La Historia Me Absolverá*, ed. Pedro Álvarez Tabío and Guillermo Alonso Fiel, La Habana: Oficina de Publicaciones del Consejo de Estado, 2005, 47. 'Under the Claudian yoke' as in the city of Claudius where, in 32 BC, the Samnite general Pontius Herennius made the defeated Roman army file past him bent double in humiliation.
75. International Bank for Reconstruction and Development, *Report of the Mission to Cuba, July 1951*, Washington, DC: Office of the President, 13.
76. Orlando Borrego Díaz, speech, International Youth Seminar, 23 November 2002. See also Borrego, *El Camino del Fuego*, 19.
77. Cited by Anderson, *Che Guevara*, 438.
78. In the Ministry of Industries Menéndez was director of the Consolidated Enterprise of Sugar, Borroto the director of Supervision and Sánchez the director of the Consolidated Enterprise of Minerals and the Cuban Institute of Technological Research.
79. Borrego, *El Camino del Fuego*, 15.

80. Mario Zorrilla, interview, 27 March 2006.
81. The 'Ministerio de Bienes Malversados' was set up in January 1959 and headed by Faustino Pérez, a leader of the urban M26J, in accordance with point 5 of the Moncada Programme: confiscation of the property of ministers and politicians involved with Batista.
82. Borrego, *El Camino del Fuego*, 16.
83. Ruiz, interview.
84. Valdés, *Historia de la Reforma Agraria*, 198.
85. Joaquín Infante, interview, 18 January 2005. Infante was a public accountant on the team which intervened in the telephone company.
86. Boorstein, *Economic Transformation of Cuba*, 147.
87. For a daily chronology see Jane Franklin, *Cuba and the United States: A Chronological History*, Melbourne: Ocean Press, 1997.
88. Borrego, speech, International Youth Seminar, see also *El Camino del Fuego*, 19.
89. Borrego, speech, International Youth Seminar, see also *El Camino del Fuego*, 19.
90. Eugenio Busott, interview, 9 December 2004.
91. Ruiz, interview.
92. Ángel Arcos Bergnes, interview, 8 December 2004.
93. Ruiz, interview.
94. Ruiz, interview.
95. Enrique Oltuski, 'Fundamentos de la Organización del Ministerio de Industrias', in *40 aniversario Ministerio de Industrias*, La Habana: Editora Política, 2001, 12–15.
96. Harry Villegas Tamayo, interview, 22 March 2006.
97. Ruiz, interview.
98. Enrique Oltuski, interview, 15 February 2006.
99. Juan Valdés Gravalosa, interview, 22 February 2006.
100. See Enrique Oltuski, *Vida Clandestina: My Life in the Cuban Revolution*, New York: Wiley, 2002.
101. Oltuski, interview, 15 February 2006.
102. Menéndez, interview, 17 February 2006.
103. Zorrilla, interview.
104. Zorrilla, interview.
105. Boorstein, *Economic Transformation of Cuba*, 147.
106. Boorstein, *Economic Transformation of Cuba*, 140.
107. Héctor Rodríguez Llopart, in Adys Cupull and Friolan González (eds), *Entre Nosotros*, La Habana: Ediciones Abril, 1992, 92–4.
108. Borrego, interview, 16 November 2004. Details of Guevara's analysis of the operation of the law of value under socialism are given in Chapter 3.
109. Borrego, interview, 30 November 2004.
110. Guevara, 'Informe de un Viaje a los Países Socialistas', in *Ernesto Che Guevara: Obras 1957–1967*, Vol. II, La Habana: Casa de Las Americas, 1970, 109.
111. A detailed 'organigram' (organisational structure) of the Ministry of Industries appears as Appendix 1.
112. Bertram Silverman (ed.), *Man and Socialism in Cuba: The Great Debate*, New York: Atheneum, 1971, 11.

CHAPTER 3

1. Guevara, 'Reuniones Bimestrales', 20 January 1962, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. VI, La Habana: Ministerio de Azúcar, 1966, 147.
2. Guevara, 'Reuniones Bimestrales', 5 December 1964, 569.
3. This chapter is concerned with the theory behind the BFS, not its practical implementation, which is detailed in the following chapters.
4. Fidel Castro, 'Discurso Pronunciado por Fidel Castro el 8 de Octubre de 1987', in David Deutschmann and Javier Salado (eds), *Ernesto Che Guevara: Gran Debate: Sobre la economía en Cuba 1963–1964*, La Habana: Ciencias Sociales, 2003, 402–3.
5. As claimed by Carmelo Mesa-Lago, 'Ideological, Political and Economic Factors in the Cuban Controversy on Material Versus Moral Incentives', *Journal of Interamerican Studies and World Affairs*, Vol. 14:1, 1972, 49–111.
6. Robert Bernardo identifies two groups among those rejecting Guevara's BFS: 'those who would expand the concept of *khozraschet* to include Libermanist methods of decentralizing the administrative system and those who would expand, to include market socialism. The latter often disguised their market orientation, but both camps were united in their relative lack of concern for ensuring the primacy of moral incentives.' *The Theory of Moral Incentives in Cuba*, Alabama: University of Alabama Press, 1971, 19.
7. JUCEPLAN worked according to the national development strategy which was formulated by the government's Economic Commission on which sat Guevara (MININD), Rodríguez (INRA) and Osvaldo Dorticós (President of Cuba).
8. Guevara, 'Reuniones Bimestrales', 11 July 1964, 505.
9. Orlando Borrego Díaz, *Che, Recuerdos en Ráfaga*, La Habana: Ciencias Sociales, 2004, 138.
10. Interviews with: Orlando Borrego Díaz, 16 November 2004 and 24 January 2005; Ángel Arcos Bergnes, 8 December 2004; Tirso Sáenz, 7 January 2005; Enrique Oltuski, 12 January 2005; and Francisco Buron Seña, 22 February 2005.
11. Borrego, *Che, Recuerdos en Ráfaga*, 138–40.
12. Buron, interview. Buron was head of the Auditing Department in MININD, leaving in March 1962 to become Vice Minister of Domestic Trade. He continued to participate in Guevara's *Capital* seminars.
13. Arcos, interview, 2004.
14. For example, Bertram Silverman (ed.) *Man and Socialism in Cuba: The Great Debate*, New York: Atheneum, 1971. The law of value is explained below.
15. For example, Bernardo, *Theory of Moral Incentives*.
16. For example, Joaquín Infante, participant in the Debate.
17. Sally Gainsbury, 'The "Great Debate" as the Fulcrum of Competing Narratives of the Cuban Revolution', PhD thesis, Wolverhampton University, 2006. '*Cubanidad*' is the collective sense of national identity, irrespective of race, class or religion. Gainsbury's philosophical interpretation of the Great Debate provides a useful historiography citing numerous authors and examining the political motivations behind their different interpretations.

18. For example, Mesa-Lago, 'Ideological, Political and Economic Factors in the Cuban Controversy', and Jorge I. Domínguez, *Cuba: Order & Revolution*, Cambridge, Mass.: Harvard University Press, 1978.
19. Ernest Mandel, 'El Debate económico en Cuba durante el periodo 1963–1964', in Deutschmann and Salado, *Gran Debate*, 347–57.
20. This chapter summarises Guevara's analysis in those articles, highlighting differences with other contributors, but not providing an exhaustive account of the Great Debate.
21. Interviews with: Armando Hart, 14 March 2006; Omar Fernández Cañizares, 2 March 2006, Havana; and Alfredo Menéndez, 11 February 2005.
22. Sáenz, interview, 2005.
23. Fernández Cañizares, interview.
24. Alfredo González Gutiérrez, interview, 27 December 2004.
25. Juan Borroto, interview, 26 January 2006.
26. Jorge Ruiz Ferrer, interview, 5 April 2006.
27. Guevara, 'Reuniones Bimestrales', 5 December 1964, 577.
28. Juan Valdés Gravalosa, interview, 22 February 2006.
29. Michael Lowy, *The Marxism of Che Guevara: Philosophy, Economics and Revolutionary Warfare*, London: Monthly Review Press, 1973, 35.
30. As argued by Bertram Silverman.
31. Silverman, *Man and Socialism in Cuba*, 11.
32. Guevara argued that average productivity be considered from an international perspective, particularly for a small country dependent on foreign trade.
33. The search for higher than average profits drives technological advances and raises productivity via competition, constantly revolutionising the productive forces.
34. See David Yaffe, 'Value and Price in Marx's Capital', *Revolutionary Communist*, No. 1 (2nd edn), May 1976, London: RCG Publications, 31–49.
35. Guevara, 'On the Concept of Value', in Silverman, *Man and Socialism in Cuba*, 232. He was rebuking Alberto Mora who wrote that value is 'a category created by man under specific circumstances and with a specific purpose, and is therefore bound by man's social relationships'. Mora, 'Law of Value', in Silverman, *Man and Socialism in Cuba*, 224.
36. Guevara, 'On the Concept of Value', 234.
37. Guevara, 'On the Budgetary Finance System' (henceforth 'BFS'), in Silverman, *Man and Socialism in Cuba*, 143.
38. Guevara, 'On the Concept of Value', 237.
39. Mandel, 'Mercantile Categories in the Period of Transition', in Silverman, *Man and Socialism in Cuba*, 82.
40. Charles Bettelheim, 'On Socialist Planning and the Level of Development of the Productive Forces', in Silverman, *Man and Socialism in Cuba*, 45.
41. Guevara, 'The Meaning of Socialist Planning', in Silverman, *Man and Socialism in Cuba*, 109.
42. See David Reed, *Ireland: The Key to the British Revolution*, Larkin Publications, 1984, Chapters 1 and 2.
43. Guevara, 'Meaning of Socialist Planning', 100–1.
44. Mandel, 'Mercantile Categories', 90.
45. Mandel, 'Mercantile Categories', 92.

46. Joseph V. Stalin, *Economic Problems of Socialism in the USSR*, Peking: Foreign Languages Press, 1972, 3–4.
47. The term ‘mercantile’ is translated in Silverman’s book from the Spanish *mercantil* which can also be translated as ‘commercial’. It is not directly related to the term ‘mercantilist’ which implies something historically specific; buying and selling commodities at differential prices to make a profit. In the Great Debate, *mercantil* is used to indicate commodity production and commercial relations. This discrepancy makes a difference to the sense of the argument. For example, Silverman’s translation of Guevara’s article ‘Banking, Credit and Socialism’ reads: ‘the bank’s existence is contingent upon mercantile [*mercantil*] relationships of production, whatever high form they may assume’, *Man and Socialism in Cuba*, 298. In Carlos Tablada’s book the translation reads: ‘the existence of banking is dependent on commodity relations of production, however developed they may be’. *Che Guevara: Economics and Politics in the Transition to Socialism*, 2nd edn, New York: Pathfinder, 1990, 138.
48. Guevara, ‘BFS’, 142.
49. Carlos Rafael Rodríguez, ‘Sobre la Contribución del Che al Desarrollo de la Economía Cubana’ in Deutschmann and Salado, *Gran Debate*, 365.
50. Guevara, ‘On Production Costs and the Budgetary System’, in Silverman, *Man and Socialism in Cuba*, 114.
51. Alberto Mora, ‘On the Operation of the Law of Value in the Cuban Economy’, in Silverman, *Man and Socialism in Cuba*, 228.
52. Guevara, ‘On the Concept of Value’, 235–6.
53. Guevara, ‘BFS’, 143.
54. Guevara, ‘Meaning of Socialist Planning’, 109.
55. Joaquín Infante, interview, 18 January 2005. In 1963 Infante was director of Finances and Prices in INRA.
56. Guevara pointed out that Marx did not anticipate the use of money in the transition from capitalism to communism, although in the *Critique of the Gotha Programme* he envisaged individual rewards to labour, in the form of labour bonds received in exchange for socially necessary labour time. Guevara, ‘BFS’, 124–5.
57. Guevara, ‘BFS’, 132.
58. Detailed in Chapter 5.
59. Cited by Marcelo Fernández Font, ‘Development and Operation of Socialist Banking in Cuba’, in Silverman, *Man and Socialism in Cuba*, 280.
60. Guevara, ‘Banking, Credit, and Socialism’, in Silverman, *Man and Socialism in Cuba*, 298.
61. Guevara, ‘Banking, Credit, and Socialism’, 300.
62. Fernández Font, ‘Development and Operation of Socialist Banking’, 283–4.
63. Marx, *Capital*, Vol. 3, cited by Guevara, ‘Banking, Credit, and Socialism’, 301–3.
64. Font, ‘Development and Operation of Socialist Banking’, 293.
65. Guevara, ‘Banking, Credit, and Socialism’, 312. No source given for Marx.
66. Marx, *Capital*, Vol. 3, cited by Guevara, ‘Banking, Credit, and Socialism’, 303.
67. Font, ‘Development and Operation of Socialist Banking’, 278.
68. Guevara, ‘Banking, Credit, and Socialism’, 304.

69. Font, 'Development and Operation of Socialist Banking', 286.
70. Guevara, 'Banking, Credit, and Socialism', 304.
71. Guevara, 'Banking, Credit, and Socialism', 305.
72. Details in Chapter 6.
73. Guevara, 'On Production Costs and the Budgetary System', 118–19.
74. Guevara, 'On Production Costs and the Budgetary System', 120–1.
75. Guevara, 'On Production Costs and the Budgetary System', 119.
76. Guevara, 'On Production Costs and the Budgetary System', 118.
77. Guevara, 'On Production Costs and the Budgetary System', 120.
78. Font, 'Development and Operation of Socialist Banking', 292.
79. Miguel Cossio, 'Contribution to the Debate on the Law of Value', in Silverman, *Man and Socialism in Cuba*, 261.
80. Guevara, 'On Production Costs and the Budgetary System', 114.
81. González, interview, February 2006.
82. Guevara, 'BFS', 144.
83. Guevara, 'On Production Costs and the Budgetary System', 116.
84. Guevara, 'On Production Costs and the Budgetary System', 116–17.
85. Guevara, 'BFS', 144–5.
86. Guevara, 'BFS', 145.
87. Guevara, 'BFS', 146.
88. Guevara, interview with Jean Daniels 1964, cited by Tablada, *Che Guevara*, 77.
89. For example, Mike González, *Che Guevara and the Cuban Revolution*, London: Bookmarks, 2004.
90. Fernando Martínez Heredia, *Che, el Socialismo y el Comunismo*, La Habana: Casa de Las Americas, 1989, 69.
91. Martínez Heredia, *Che*, 72.
92. See Guevara's *Guerrilla Warfare*, London: Pelican Books, 1970.
93. Guevara, 'Man and Socialism in Cuba', in Silverman, *Man and Socialism in Cuba*, 343. The practical policies implemented to raise consciousness and commitment are examined in the following chapters.
94. Marx, 'Economic and Philosophical Manuscripts', cited by Guevara, 'BFS', 123–4. Translations differ; here, the translation which appears in Silverman, *Man and Socialism in Cuba*, is cited.
95. Guevara, 'Man and Socialism in Cuba', 346.
96. Guevara, 'Man and Socialism in Cuba', 342.
97. Guevara, 'Man and Socialism in Cuba', 343.
98. Rodríguez, 'Sobre la Contribución del Che', 379.
99. Joaquín Infante Ugarte, 'On the Operation of the Auto-Financed Enterprise', in Silverman, *Man and Socialism in Cuba*, 168.
100. Nikita S. Khrushchev, cited by Infante, 'On the Operation of the Auto-Financed Enterprise', 183.
101. Guevara, 'BFS', 134.
102. Guevara, 'BFS', 135; my italics.
103. Mesa-Lago quotes this paragraph from Guevara, but omits this key sentence. 'Ideological, Political and Economic Factors in the Cuban Controversy', 62.
104. Nolte concluded that during the Cold War: 'free Marxism fought in the front lines for the Western cause'. Ernst Nolte, 'The Relationship between "Bourgeois"

- and “Marxist” Historiography’, *History and Theory*, Vol. 14:1, February 1975, 68–70.
105. Karl Marx, *The Eighteenth Brumaire of Louis Bonaparte*, Moscow: Progress Publishers, 1977, 10.
 106. Similarly, on 20 April 1965 Fidel Castro said: ‘beware of those Marxist-Leninists who are only and exclusively worried about philosophical questions, for socialism has many practical and serious problems to solve. And it is the duty of Marxist-Leninists to solve them, a duty which becomes more essential when we realise that it is precisely revolutionary power that offers the greatest possibilities of solving them.’ Cited by John D. Martz, ‘Doctrine and Dilemmas of the Latin American “New Left”’, *World Politics*, Vol. 22:2, January 1970, 195.
 107. Guevara, 9 May 1961, cited by K. S. Karol, *Guerrillas in Power*, trans. Arnold Pomerans, London: Jonathan Cape, 1971, 46–7. Guevara was responding to Karol’s criticism of Cuba’s use of socialist bloc manuals.
 108. Karol, *Guerrillas in Power*, 46.
 109. Guevara, cited by Ángel Arcos Bergnes, *Evocando al Che*, La Habana: Ciencias Sociales, 2007, 18.
 110. Details in Chapter 9.
 111. Ken Cole, ‘The Cuban Revolution: Martí’s Insight, Marx’s Theory and Guevara’s Practice; Lessons for Socialist Development in the 21st Century’, Conference paper, January 2004, 28.

CHAPTER 4

1. ‘Revolutionary Proclamation of Santiago de Cuba and the Sierra Maestra’, cited by Armando Hart, *Aldabonazo: Inside the Cuban Revolutionary Underground, 1952–1958*, London: Pathfinder, 2004, 277–82.
2. Karl Marx and Frederick Engels, *Manifesto of the Communist Party*, Moscow: Progress Publishers, 1975, 51.
3. Antoni Kapcia, ‘Education, Culture and Identity in Cuba: Appraising the Role of Education in Shaping and Defining Society’, paper presented at the Institute for the Study of the Americas, University of London, 29 October 2004.
4. Vilaseca taught Guevara algebra, trigonometry, analytic geometry, differential equations and differential and integral calculus. Salvador Vilaseca, unpublished interview with Tatiana Martínez Hernández, Havana, 1994. Also, Juan Raimundo Jiménez Velo, interview, 6 February 2006, and Tirso Sáenz, interview, 2 February 2006. Rojas works in the Instituto de Cibernética, Matemática y Computación.
5. Miguel Alejandro Figueras, interview, 27 January 2006. Figueras participated in this course.
6. Cited by Sáenz, interview, 2005.
7. Juan Valdés Gravalosa, interview, 22 February 2006. Guevara began studying Linear Programming with Vilaseca in mid 1964, once the latter could no longer teach him anything new in mathematics. He kept one class ahead of his MININD colleagues. Vilaseca, interview.
8. Harry Villegas Tamayo, interview, 22 March 2006. Villegas was in both the Congo and Bolivia with Guevara.

9. Guevara was captured by the army in Bolivia with books by Lenin, Trotsky, Pablo Neruda and Nicolás Guillén's poetry and a biography of Karl Marx. The other Cuban survivors were Leonardo Tamayo and Daniel Alarcón.
10. Detailed in Chapter 9.
11. Leo Huberman and Paul M. Sweezy, *Cuba: Anatomy of a Revolution*, New York: Monthly Review Press, 1960, 95–6.
12. Fidel Castro, 'Discurso pronunciado por Fidel Castro el 8 de octubre de 1987 en el acto central por el vigésimo aniversario de la muerte de Ernesto Che Guevara', in David Deutschmann and Javier Salado (eds), *Ernesto Che Guevara: El Gran Debate: Sobre la economía en Cuba*, Melbourne: Ocean Press, 2003, 392.
13. Figueras, interview.
14. Guevara, cited by Orlando Borrego Díaz, *Che: El Camino del Fuego*, La Habana: Imagen Contemporánea, 2001, 172.
15. Guevara, 'Reuniones Bimestrales', 14 July 1962, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. VI, La Habana: Ministerio de Azúcar, 1966, 266.
16. Sáenz, interview, 2005.
17. Sáenz, interview, 2005. Sáenz became Vice Minister of Technical Development in MININD in 1963.
18. Guevara, 'Against Bureaucratism', in David Deutschmann (ed.), *Che Guevara Reader*, Melbourne: Ocean Press, 1997, 161.
19. Villegas, interview.
20. Pablo Neruda recalled meeting Guevara: 'I was flattered by what he told me about my book *Canto General*. He would read it to his guerrillas at night, in the Sierra Maestra. Now, years later, I shudder when I think that my poems accompanied him to his death ... I keep seeing in Che Guevara that pensive man who in his heroic battles always had a place, next to his weapons, for poetry.' Pablo Neruda, *Memoirs*, London: Souvenir Press, 2004, 323.
21. María Teresa Sánchez, interview, 8 March 2006. Camilo Cienfuegos did the same with his Rebel Army column in the Columbia barracks.
22. C. Fred Judson, *Cuba and the Revolutionary Myth: The Political Education of the Cuban Rebel Army, 1953–1963*, Colorado: Westview Press, 1984, 237.
23. Verde Olivo, 27 March 1960, cited by Judson, *Cuba and the Revolutionary Myth*, 265.
24. Fernando Hernández Heredia, Seminar, 'Pensamiento Militares de Ernesto Che Guevara', *Diplomado: Pensamiento Latinoamericano, Che Guevara*. Facultad Latinoamericana de Ciencias Sociales (FLACSO), University of Havana, 19 January 2006.
25. Judson, *Cuba and the Revolutionary Myth*, 237.
26. Huberman and Sweezy, *Cuba*, 97.
27. Laurie Johnson, 'Cuban Nationalism and Responses to Private Education in Cuba, 1902–1958', in Will Fowler (ed.), *Ideologues and Ideologies in Latin America*, Westport, Conn.: Greenwood Press, 1997, 39.
28. Hart, *Aldabonazo*, 304.
29. Hart, *Aldabonazo*, 305.
30. Lionel Soto, 'Las Escuelas de Instrucción Revolucionaria y la Formación de Cuadros', *Cuba Socialista*, Año 1:3, November 1961, 30.

31. Tirso W. Sáenz, *El Che Ministro: Testimonio de un colaborador*, La Habana: Ciencias Sociales, 2005, 52–4.
32. Sáenz, interview, 2005.
33. José Luis Puñales, interview, 21 January 2005.
34. Juan Alberto Castellanos Villamar, interview, 1 March 2006.
35. Orlando Borrego Díaz, Seminar, 'Los pensamientos internacionalistas de Ernesto Che Guevara', *Diplomado: Pensamiento Latinoamericano, Che Guevara*. Facultad Latinoamericana de Ciencias Sociales (FLACSO), University of Havana, 18 January 2006.
36. Guevara, 'Reuniones Bimestrales', 9 March 1963, 340.
37. Puñales, interview. Although Guevara also stated that not everyone was cut out for a university education.
38. Ángel Arcos Bergnes, *Evocando al Che*, La Habana: Ciencias Sociales, 2007, 87.
39. Edison Velázquez, interview, 21 January 2006.
40. Guevara, 'Reuniones Bimestrales', 22 February 1964, 461.
41. Guevara, 'Reuniones Bimestrales', 22 February 1964, 462.
42. Guevara, 'Reuniones Bimestrales', 14 July 1962, 342.
43. Guevara, 'Reuniones Bimestrales', 9 March 1963, 340.
44. For example, the January 1963 issue advertised courses at the School of Automation designed 'to create technicians in automation, industrial instrumentation and mechanical instrumentation'. There were courses at different levels: specialists in automation (28–30 months); technicians in instrumentation and electronics (24 months); industrial instrumentation; and mechanical instrumentation. *Nuestra Industria*, Revista de Ministerio de Industrias, Año 3:1, Enero 1963, 51–2.
45. Sáenz, interview, 2006.
46. Sáenz, *El Che Ministro*, 205–6.
47. *Memoria Anual 1964*, La Habana: Ministerio de Industrias, 1965, 77.
48. Details on salary scale are given below.
49. Orlando Borrego Díaz, interview, 23 November 2004.
50. Borrego, *Diplomado*.
51. Borrego, *El Camino del Fuego*, 249.
52. Guevara, 'Discurso en el XI Congreso Nacional Obrero', 20 November 1961, in *Ciencia, Tecnología y Sociedad 1959–1965*, La Habana: Editorial Academia, 2003, 229–30.
53. Ángel Arcos Bergnes, interview, 8 December 2004.
54. Guevara, 'Reuniones Bimestrales', March 1963, 341.
55. Guevara, 'Reuniones Bimestrales', August 1963, 363.
56. Guevara, 'Reuniones Bimestrales', August 1963, 363–4.
57. Guevara, 'Reuniones Bimestrales', 12 October 1963, 406.
58. Guevara, 'Reuniones Bimestrales', October 1963, 407.
59. Guevara, 'Tareas industriales de la Revolución', March 1962, in *Escritos y Discursos*, Vol. 6, La Habana: Ciencias Sociales, 1977, 117.
60. Details about psychometric tests are given in Chapter 8.
61. Guevara, 'Discurso en la graduación de administradores del MININD', 21 December 1961, in *Ciencia, Tecnología y Sociedad 1959–1965*, 229.
62. Castellanos, interview.

63. Villegas, interview.
64. Guevara, 'Reuniones Bimestrales', 10 March 1962, 183.
65. Guevara, 'Reuniones Bimestrales', March 1962, 184.
66. Guevara, 'Reuniones Bimestrales', March 1962, 185.
67. Guevara, 'Reuniones Bimestrales', 28 September 1962, 315.
68. Arcos, *Evocando al Che*, 27.
69. Guevara, 'Reuniones Bimestrales', October 1963, 408.
70. Guevara, 'Reuniones Bimestrales', February 1964, 461.
71. Guevara, 'Reuniones Bimestrales', February 1964, 463.
72. Voluntary labour and incentives systems are detailed in Chapter 8.
73. Puñales, interview.
74. Guevara, 'On the budgetary finance system' (henceforth 'BFS'), in David Deutschmann (ed.), *Che Guevara Reader: Writings on Guerrilla Strategy, Politics & Revolution*, 2nd edn, Melbourne: Ocean Press, 1998, 180.
75. Guevara, 'BFS', 182.
76. Guevara, 'Reuniones Bimestrales', 20 January 1962, 147.
77. Guevara, 'Reuniones Bimestrales', January 1962, 149.
78. Huberman and Sweezy, *Cuba*, 6–7.
79. Guevara, 'Comparencia televisada en el programa Ante la Prensa', 20 October 1960, in *Ciencia, Tecnología y Sociedad 1959–1965*, 61–2.
80. Guevara, 'Discurso en el XI Congreso Nacional Obrero', 20 November 1961, in *Ciencia, Tecnología y Sociedad 1959–1965*, 58–9.
81. Mechanisation, automation and productivity are discussed in Chapter 7.
82. Guevara, 'Reuniones Bimestrales', March 1962, 210.
83. Sáenz, interview, 2006.
84. Borrego, *El Camino del Fuego*, 312–13.
85. Guevara, 'Reuniones Bimestrales', 9 May 1964, 481–2.
86. Guevara, 'Reuniones Bimestrales', May 1964, 482.
87. Borrego, interview, 23 November 2004.
88. Guevara, 'Discurso a la clase obrera', 14 June 1960, *Escritos y Discursos*, Vol. 6, 138–9.
89. Detailed in Chapter 2.
90. Manuel Malmierca, 'Reuniones Bimestrales', March 1962, 197.
91. Miguel Dominguez, 'Reuniones Bimestrales', March 1962, 195.
92. Guevara, 'Reuniones Bimestrales', March 1962, 202.
93. Carlos Tablada Pérez, *Che Guevara: Economics and Politics in the Transition to Socialism*, 2nd edn, New York: Pathfinder, 1990, 179.
94. Guevara, 'Reuniones Bimestrales', March 1962, 203. *Malanga* is a root vegetable eaten in Cuba.
95. Guevara, 'Reuniones Bimestrales', March 1962, 203.
96. Guevara, 'Reuniones Bimestrales' March 1962, 221.
97. Pedro Pastro, 'Reuniones Bimestrales', March 1962, 229–30.
98. Unnamed comrade, 'Reuniones Bimestrales', March 1962, 247.
99. Ramírez, 'Reuniones Bimestrales', March 1962, 247.
100. Ramírez, 'Reuniones Bimestrales', March 1962, 248.
101. Pastor, 'Reuniones Bimestrales', March 1962, 231.
102. Guevara, 'Reuniones Bimestrales', July 1962, 277.
103. Guevara, 'Reuniones Bimestrales', March 1963, 346.

104. Martínez, 'La implantación del nuevo sistema salarial en las industrias de Cuba', *Cuba Socialista*, Año 3:26, October 1963, 19.
105. Guevara, 'Reuniones Bimestrales', 9 May 1964, 483–4.
106. Martínez, 'La implantación', 21–2.
107. Faure Chomón Mediavilla, interview, 16 February 2005.
108. Chomón, interview.
109. Cited by Borrego, *El Camino del Fuego*, 191.
110. Malmierca, 'Reuniones Bimestrales', March 1962, 197–8.
111. Guevara, 'Reuniones Bimestrales', July 1962, 267–8.
112. Guevara, 'Discusión colectiva; decisión y responsabilidades únicas', July 1961, in *Ernesto Che Guevara, Obras 1957–1967*, Vol. 2, La Habana: Casa de Las Americas, 1970, 123–4.
113. Published in June 1964, MININD's *Manual for Factory Administrators* asserted the workers' rights to trade union representation and the administrator's responsibility to coordinate with the unions. *Administradores de Fábricas*, 10 June 1964, 2nd edn (reprint of 1964 edn), La Habana: Ministerio de Industrias, 1988, sección 4, asunto 3, 1; sección 5, asunto 17, 2; sección 17, asunto 2, 1; sección 17, asunto 4, 1.
114. Guevara, 'Discusión colectiva', 125–6.
115. Guevara, 'Discusión colectiva', 126.
116. Details in Chapter 8.
117. Guevara, 'Reuniones Bimestrales', July 1962, 272.
118. Guevara, 'Reuniones Bimestrales', July 1962, 272.
119. Guevara, 'Reuniones Bimestrales', 5 December 1964, 578–9.
120. Borrego, interview, 15 March 2006.
121. Guevara, 'Reuniones Bimestrales', December 1964, 579.
122. Guevara, 'Reuniones Bimestrales', December 1964, 579.
123. Guevara, 'Reuniones Bimestrales', December 1964, 581.
124. Guevara, 'Participación en programa televisado Acerca de la implantación de Normas de Trabajo y Escala Salarial en Los Sectores Industriales', 26 December 1963, in *Escritos y Discursos*, Vol. 7, 163–4.
125. Tablada, *Che Guevara*, 180.
126. Martínez, 'La implantación', 9–10.
127. Martínez, 'La implantación', 10–11.
128. Fidel Castro, 'To create wealth with social conscience', 26 July 1968, in Bertram Silverman (ed.), *Man and Socialism in Cuba: The Great Debate*, New York: Atheneum, 1971, 368.
129. See Martínez, 'La implantación'. Details are also given in Tablada, *Che Guevara*; Roberto Bernardo, *The Theory of Moral Incentives in Cuba*, Alabama: University of Alabama Press, 1971.
130. Sáenz, interview, 2005.
131. Martínez, 'La implantación', 15.
132. *Memoria Anual* 1964, 26. In June 1964, the EC of Sugar split off from MININD to form the Ministry of Sugar, headed by Orlando Borrego Díaz – consequently, the number of MININD's employees fell significantly.
133. *Memoria Anual* 1964, 29.
134. Jorge Risquet, interview, 8 February 2005.
135. Risquet, interview.
136. Bernardo, *Theory of Moral Incentives*, vii.
137. Sánchez, interview.

CHAPTER 5

1. The term 'sugar mill' refers generically to both *ingenios* (smaller mills) and *centrales* (larger, more industrial mills).
2. Ángel Arcos Bergnes, interview, 30 March 2006.
3. Arcos, interview, 2006.
4. Arcos, interview, 2006.
5. Orlando Borrego Díaz, *Che: El Camino del Fuego*, La Habana: Imagen Contemporánea, 54–5. This does not necessarily mean that production was above the 1958 level, but that they had recovered from any slump in 1959.
6. BANDES was set up by Batista to facilitate the pilfering of state revenue. See Chapter 2.
7. Alexis Codina Jiménez, interview, 27 January 2005.
8. José Luis Puñales, interview, 21 January 2005. When Puñales arrived in the large, grand office of Barcardi chief Pepin Bosch, a weary old worker appeared at the door and asked him for permission to defecate in Bosch's toilet – a symbolic gesture for his old boss.
9. Orlando Borrego Díaz, interview, 24 January 2005.
10. Fidel Castro, 'Speech by Fidel Castro on October 8, 1987', in David Deutschmann (ed.), *Che: A Memoir by Fidel Castro*, Australia: Ocean Press, 1994, 153.
11. Ernesto 'Che' Guevara, 'On the Budgetary Finance System', in Bertram Silverman (ed.), *Man and Socialism in Cuba: The Great Debate*. New York: Atheneum, 1971, 143.
12. See Chapter 3.
13. Guevara, 'Reunion Bimestrales', January 1962, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. 6, La Habana: Ministerio de Azúcar, 1966, 151.
14. Guevara, 'Reuniones Bimestrales', 9 March 1963, 348.
15. Borrego, interview, 23 November 2004.
16. Arturo Guzmán Pascual, 'La Acción del Comandante Ernesto Guevara en el Campo Industrial', *Revista Bimestre Cubana*, No. 8, 1998, La Habana: Sociedad Económica Amigos del País, 32.
17. Guevara, 'Reuniones Bimestrales', 21 December 1963, 421.
18. Borrego, interview, 16 November 2004. See also Orlando Borrego Díaz, *La Ciencia de Dirección: algunos antecedentes y enfoques actuales* (based on his doctoral thesis), La Habana: SUPSCER, 1989.
19. Borrego, *El Camino del Fuego*, 157–8.
20. Borrego, *El Camino del Fuego*, 60.
21. Enrique Oltuski, interview, 15 February 2006. See also Guevara, 'Reuniones Bimestrales', 11 July 1964, 488.
22. <http://media.gm-powertrain.at/powertrain-media/background/docs/gm_history.doc>.
23. Miguel Alejandro Figueras, interview, 27 January 2006.
24. Tirso Sáenz, interview, 7 January 2005.
25. Borrego, *El Camino del Fuego*, 297.
26. Alexander Gerschenkron, *Economic Backwardness in Historical Perspective: A Book of Essays*, Cambridge, Mass.: Belknap Press of Harvard University Press, 1962.

27. Borrego, *El Camino del Fuego*, 101. It is not clear whether Guevara read Gerschenkron, but he knew the arguments posed by this school of development theory.
28. Guevara, 'Reuniones Bimestrales', 28 September 1962, 323.
29. Guevara, 'Reuniones Bimestrales', September 1962, 320–1.
30. Ministerio de Industrias, *Manual Para Administradores de Fábricas*, 2nd edn (reprint of 1964 edn), La Habana: Ministerio de Industrias, 1988.
31. *Manual Para Administradores de Fábricas*, sección 7, asunto 2, 8.
32. *Manual Para Administradores de Fábricas*, sección 7, asunto 3, 1.
33. Fidel Emilio Vascós González, interview, 16 February 2006. From 1976 to 1996, Vascós was President-Minister of the State Commission of Statistics and director general of the National Office of Statistics.
34. Guevara, 'Reuniones Bimestrales', 10 March 1962, 224.
35. Guevara, 'Reuniones Bimestrales', 14 July 1962, 259–60.
36. Guevara, 'Reuniones Bimestrales', September 1962, 326.
37. 'Reuniones Bimestrales', March 1963, 335–6.
38. Edison Velázquez, interview, 1 January 2006.
39. Velázquez, interview, 21 January 2006. Several interviewees told me about the exams.
40. Guevara, 'Reuniones Bimestrales', March 1963, 347.
41. Juan Borroto, interview, 26 January 2006.
42. Guevara, 'Reuniones Bimestrales', March 1963, 357–8.
43. Guevara, 'Reuniones Bimestrales', 10 August 1963, 362.
44. Guevara, 'Reuniones Bimestrales', August 1963, 367.
45. Guevara, 'Reuniones Bimestrales', 12 October 1963, 409.
46. Guevara, 'Reuniones Bimestrales', October 1963, 411–12.
47. Figueras, interview. Chapter 7 has details about computing.
48. Zoila González, 'La Matriz de Insumo-Producto, un nuevo Instrumento de Planificación Industrial en Cuba', in *Nuestra Industria Económica*, Junio 1964, La Habana: Ministerio de Industrias, and 'Algunas consideraciones sobre la aplicación del Insumo-Producto en el sector industrial de Cuba', in *Nuestra Industria Económica*, Febrero 1965.
49. Salvador Vilaseca, unpublished interview with Tatiana Martínez Hernández, Havana, 1994.
50. Guevara, 'Reuniones Bimestrales', January 1962, 150.
51. Guzmán, 'La Acción del Comandante Ernesto Guevara en el Campo Industrial', 29
52. Velázquez, interview, 21 January 2006.
53. Velázquez, interview, 21 January 2006.
54. Yolanda Fernández Hernández, interview, 24 March 2006.
55. Fernández Hernández, interview.
56. Velázquez, interview, 21 January 2006.
57. Velázquez, interview, 21 January 2006.
58. Velázquez, interview, 21 January 2006.
59. Francisco Buron Seña, interview, 22 February 2005.
60. Rosario Cueto Álvarez, interview, 29 March 2006.
61. Rosario Cueto Álvarez, in Adys Cupull and Froilan González (eds), *Entre Nosotros*, La Habana: Ediciones Abril 1992, 116.

62. Guevara, cited by Francisco Buron Seña, radio interview (taped), Radio Habana, 2004.
63. Guevara, 'Reuniones Bimestrales', 21 December 1963, 419.
64. Guevara, 'Reuniones Bimestrales', September 1964, 533-4.
65. Guevara, 'Reuniones Bimestrales', September 1964, 537.
66. *Memoria Anual 1964*, La Habana: Ministerio de Industrias, 1965.
67. Guevara, cited by Francisco Buron Seña, Juan Borroto, Velázquez and Ángel Arcos Bergnes. The sub-secretariats were soon renamed vice ministries for ideological reasons, as Cuba realigned its institutions from US models to Soviet and European ones.
68. Velázquez, interview, 19 January 2006.
69. Details are given in Chapter 8.
70. Guevara, 'Reuniones Bimestrales', 11 July 1964, 488.
71. Borrego, *El Camino del Fuego*, 73.
72. Codina, interview.
73. Guevara, 'Reuniones Bimestrales', 22 February 1964, 451.
74. Guevara, 'Reuniones Bimestrales', 11 July 1964, 489.
75. Borroto, interview.
76. Borroto, interview, and Ángel Arcos Bergnes, *Evocando al Che*, La Habana: Ciencias Sociales, 2007, 115-16.
77. Guevara, 'Reuniones Bimestrales', September 1962, 314.
78. *Manual Para Administradores de Fábricas*, sección 4, asunto 7, 1-4.
79. *Manual Para Administradores de Fábricas*, sección 5, asunto 19, 1.
80. Velázquez, interview, 21 January 2006.
81. Marta Lugioyo, interview, 27 March 2006.
82. Lugioyo, interview.
83. *Memoria Anual 1964*, La Habana: Ministerio de Industrias, 1965, 94.
84. Arcos, *Evocando al Che*, 110.
85. Ángel Arcos Bergnes, 'Método y estilo de trabajo de Che', in *40 Aniversario Ministerio de Industrias*, La Habana: Editora Política, 2001.
86. Borroto, interview.
87. Harry Villegas Tamayo, interview, 22 March 2006.
88. Arcos, 'Método y estilo de trabajo de Che', 23.
89. Velázquez, interview, 19 January 2006.
90. Nearly 30 examples appear in *El Che en la Revolución Cubana*, Vol. VI, 25-132.
91. Arcos, 'Método y estilo de trabajo de Che', 24.
92. Velázquez, interview, 21 January 2006.
93. Velázquez, interview, 21 January 2006.
94. Borroto, interview.
95. 'Reuniones Bimestrales', 10 March 1962, 235.
96. Guevara, 'Reuniones Bimestrales', 10 March 1962, 236-7.
97. Ramírez, 'Reuniones Bimestrales', 10 March 1962, 237.
98. Guevara, 'Reuniones Bimestrales', 10 March 1962, 238.
99. Guevara, 'Reuniones Bimestrales', 14 July 1962, 285. Edward Boorstein, details JUCEPLAN's inflated growth predictions in *The Economic Transformation of Cuba: A First Hand Account*, New York: Modern Reader Paperback, 1968. In

- 1964, MININD's growth was planned at 12 per cent and achieved 6 per cent. *Memoria Annual 1964*.
100. Velázquez, interview, 21 January 2006.
 101. Guevara, 'Reuniones Bimestrales', September 1962, 310–12.
 102. Guevara, 'Reuniones Bimestrales', September 1962, 320.
 103. Guevara, 'Reuniones Bimestrales', 9 March 1963, 344.
 104. Guevara, 'Reuniones Bimestrales', 10 August 1963, 372.
 105. Guevara, 'Reuniones Bimestrales', 10 August 1963, 377–8.
 106. *Memoria Annual 1964*, 31.
 107. *Memoria Annual 1964*, 32–40.
 108. Guevara, 'Reuniones Bimestrales', 5 December 1964, 547–8. Detailed in Chapter 7.
 109. Guevara, 'Reuniones Bimestrales', 5 December 1964, 550.
 110. Guevara, 'Reuniones Bimestrales', 5 December 1964, 556.
 111. *Manual Para Administradores de Fábricas*, sección 5, asunto 11, 1.
 112. Borrego, *El Camino del Fuego*, 104.
 113. Guevara, 'Reuniones Bimestrales', 9 May 1964, 470. The slogan was thought up by Castillo, a Cuban publicist in the 1950s who worked in quality control in MININD.
 114. Boorstein, *Economic Transformation of Cuba*, 91.
 115. Guevara, cited by Boorstein, *Economic Transformation of Cuba*, 104. See also Guevara, 'Discurso en la Primera Reunion Nacional de Produccion', 27 de octubre de 1961, in *Ernesto Che Guevara: Escritos y Discursos*, Vol. 5, 211–65, La Habana: Ciencias Sociales, 1977. A commemorative issue of *Juventud Rebelde* newspaper on the first anniversary of Guevara's death has a photo of him visiting a soft drinks factory in 1960 with the caption: 'he was concerned with the taste of Coca-Cola, and his justified criticisms led to the improvements and the quality it has today'. *Juventud Rebelde*, 7 October 1968, 4.
 116. Guevara, cited by Boorstein, *Economic Transformation of Cuba*, 103. Ángel Arcos Bergnes adds that the tubes of hard toothpaste had a tendency to explode, especially when squeezed. An enemy radio station was crediting these explosions to counter-revolutionary activity. Arcos, *Evocando al Che*, 71–2.
 117. Juan Valdés Gravalosa, 'Reuniones Bimestrales', January 1962, 161.
 118. Guevara, 'Reuniones Bimestrales', September 1962, 308–9.
 119. Guevara, cited by Arcos, *Evocando al Che*, 69. Tirso Sáenz wrote a witticism during the meeting: 'Que viva Industrias Locales / gritaba una cucaracha / porque el "FLIT" que ahora hace / muy sabroso, me emborracha / Y siendo en palabras parco / y viendo el problema Agrario / que vaya a matarlas Arcos / en Trabajo Voluntario.'
 120. Guevara, cited by Borrego, *El Camino del Fuego*, 311.
 121. Guevara, 'Reuniones Bimestrales', 9 May 1964, 470.
 122. Guevara, 'Reuniones Bimestrales', 9 May 1964, 470–5.
 123. *Manual Para Administradores de Fábricas*, sección 9, asunto 2, 1.
 124. *Manual Para Administradores de Fábricas*, sección 4, asunto 7, 3.
 125. Valdés Gravalosa, interview.
 126. Guevara, 'Reuniones Bimestrales', September 1964, 542.
 127. Preámbulo, *Informe Sobre los Elementos Requeridos Para Crear una Empresa Industrial Modelo y de los Métodos de Trabajo que Deben Aplicarse en los*

Distintos Frentes de Actividades, La Habana: Ministerio de Industrias, 15 April 1965.

128. Valdés Gravalosa, interview.

CHAPTER 6

1. Orlando Borrego Díaz, *Che: El Camino del Fuego*, La Habana: Imagen Contemporánea, 175.
2. Guevara, 'Charla a los trabajadores del Ministerio de Industrias', 6 October 1961, in *Ernesto Che Guevara: Escritos y Discursos*, Vol. 5, La Habana: Ciencias Sociales, 1977, 294. Full transcript, 291–309.
3. Guevara, 'Reuniones Bimestrales', 14 July 1962, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. VI, La Habana: Ministerio de Azúcar, 1966, 267.
4. Borrego, *El Camino del Fuego*, 226.
5. Guevara, 'Reuniones Bimestrales', July 62, 306.
6. Guevara, 'Charla a los trabajadores del Ministerio de Industrias', 299.
7. Guevara, 'Charla a los trabajadores del Ministerio de Industrias', 303–4.
8. Guevara, 'Charla a los trabajadores del Ministerio de Industrias', 305.
9. Guevara, 'Reuniones Bimestrales', 21 December 1963, 413.
10. Juan Valdés Gravalosa, interview, 22 February 2006.
11. In 1961, called the Integrated Revolutionary Organisations (Organizaciones Revolucionarias Integradas – ORI), replaced in 1962 by the United Party of the Socialist Revolution (Partido Unido de la Revolución Socialista – PURS), which became the Cuban Communist Party (Partido Comunista de Cuba – CCP) in 1965.
12. Guevara, 'Reuniones Bimestrales', 10 March 1962, 178–9.
13. Detailed in Chapter 8.
14. Valdés Gravalosa, *Juventud Rebelde*, 7 October 1967, 5.
15. Valdés Gravalosa, interview.
16. *Nuestra Industria*, La Habana: Ministerio de Industrias, Año 3:1, 1963.
17. Valdés Gravalosa, *Juventud Rebelde*, 7 October 1967, 5.
18. María Teresa Sánchez, interview, 8 March 2006.
19. Mihalyfi devised a system for increasing productivity through the rational utilisation of the working day. 'Plan Mihalyfi', based on this method, was applied in MININD's Metallurgy and Heavy Mechanics branch.
20. *Nuestra Industria Tecnología*, La Habana: Ministerio de Industrias, Año 2:8, 1963.
21. Miguel Alejandro Figueras, interview, 27 January 2006.
22. *Manual Para Administradores de Fábricas*, 10 June 1964, 2nd edn (reprint of 1964 edn), La Habana: Ministerio de Industrias, 1988, sección 5, asunto 10, 1.
23. *Manual Para Administradores de Fábricas*, sección 5, asunto 10, 1.
24. *Manual Para Administradores de Fábricas*, sección 10, asunto 1, 1–3.
25. Paraphrased from Guevara's article 'El Cuadro, Columna Vertebral de la Revolución' in *Cuba Socialista*, Año 2: No 13, (Septiembre 1962), see also 'The Cadre: Backbone of the Revolution' in David Deutschmann (ed.), *Che*

Guevara Reader: Writings on Guerrilla Strategy, Politics & Revolution, 2nd edn, Melbourne: Ocean Press, 1998, 127–33.

26. *Manual Para Administradores de Fábricas*, sección 2, asunto 9, 1.
27. *Manual Para Administradores de Fábricas*, sección 2, asunto 9, 2–3.
28. Guevara, 'Reuniones Bimestrales', March 1962, 176.
29. Borrego, *El Camino del Fuego*, 164.
30. Arturo Guzmán Pascual, 'La Acción del Comandante Ernesto Guevara en la Campo Industrial', *Revista Bimestre Cubana*, No. 8, 1998, 29.
31. Guevara, 'Discurso de la Primera Reunión Nacional de Producción del MININD', in *Escritos y Discursos*, Vol. 5, 218.
32. Guevara, 'Discurso de la Primera Reunión', 218.
33. Guevara, 'Reuniones Bimestrales', July 1962, 289.
34. *Nuestra Industria*, Año 3:1, 55.
35. *Nuestra Industria*, Año 3:1, 62–78.
36. Borrego, *El Camino del Fuego*, 12.
37. Borrego, *El Camino del Fuego*, 12.
38. *Manual Para Administradores de Fábricas*, sección 9, asunto 3, 3.
39. *Manual Para Administradores de Fábricas*, sección 9, asunto 3, 3.
40. Borrego, *El Camino del Fuego*, 12–13.
41. Guevara, 'Reuniones Bimestrales', 22 February 1964, 402.
42. Tomás Gutiérrez Alea (dir.), *La Muerte de Un Burócrata*, La Habana: ICAIC, 1966.
43. Tirso Sáenz, Emilio García Capote and Luís Gálvez, 'El papel del Che en el desarrollo científico y tecnológico de Cuba', in *40 Aniversario Ministerio de Industrias*, La Habana: Editora Política, 2001, 78.
44. Borrego, *El Camino del Fuego*, 164.
45. Guevara, 'Discurso en el XI Congreso Nacional Obrero', 20 November 1961, in *Ciencia, Tecnología y Sociedad 1959–1965*, La Habana: Editorial Academia, 2003, 212.
46. Guevara, 'Reuniones Bimestrales', 20 January 1962, 152.
47. Guevara, 'Reuniones Bimestrales', March 1962, 250.
48. Guevara, 'Camparecencia televisada en el programa "Información Pública"', 25 February 1964 in *Ciencia, Tecnología y Sociedad*, 180.
49. Examples are cited in Chapter 7.
50. Ángel Arcos Bergnes, *Evocando al Che*, La Habana: Ciencias Sociales, 2007, 149.
51. Guevara, cited by Arcos, *Evocando al Che*, 149. This story was told by several interviewees.
52. This never happened because visits were completed.
53. Valdés Gravalosa, interview.
54. Harry Villegas Tamayo, interview, 22 March 2006.
55. *Manual Para Administradores de Fábricas*, sección 7, asunto 2, 10.
56. Arcos, *Evocando al Che*, 151–2. Arcos records that although asthmatics were not permitted to work in such conditions, Guevara had spent half a day doing voluntary labour at the deepest level of the mine. Despite breaking the work norm, he instructed the director Alberto Fernandez Montes de Oca not to raise it, because it was impossible to maintain the intensity he had achieved for a full day.

57. Guevara, 'Discusion Colectiva: Decisión y Responsabilidad Única', in Ernesto Che Guevara, *Obras 1957–1967*, Vol. 2, La Habana: Casa de Las Americas, 1970, 127.
58. Sáenz et al., 'El papel del Che en el desarrollo científico y tecnológico de Cuba', 79.
59. Borrego, *El Camino del Fuego*, 110–11.
60. Tirso Sáenz, interview, 7 January 2005.
61. Guevara, 'Recúperese Japón de la Tragedia Atómica', *Verde Olivo*, 19 October 1959, at <<http://cheguevara.cubasi.cu>>.
62. Omar Fernández Castiñares, interview, 2 March 2006.
63. Guevara, 'Discusion Colectiva', 131.
64. Borrego, *El Camino del Fuego*, 196.
65. Guevara, cited by Borrego, *El Camino del Fuego*, 196–7.
66. Guevara, 'Discusion Colectiva', 131.
67. *Manual Para Administradores de Fábricas*, sección 2, asunto 4, 1.
68. *Manual Para Administradores de Fábricas*, sección 2, asunto 4, 2.
69. Guevara, 'Reuniones Bimestrales', 9 March 1963, 351.
70. Borrego, *El Camino del Fuego*, 187.
71. Probably a reference to the occasion of his October 1961 speech in the ministry cited at the start of the chapter.
72. Guevara, 'Reuniones Bimestrales', February 1964, 442.
73. Guevara, 'Reuniones Bimestrales', February 1964, 442–3.
74. Guevara, 'Reuniones Bimestrales', February 1964, 444.
75. Guevara, 'Reuniones Bimestrales', July 1962, 301.
76. *Manual Para Administradores de Fábricas*, sección 16, asunto 1, 1.
77. *Manual Para Administradores de Fábricas*, sección 16, asunto 1, 1.
78. Guevara, 'Reuniones Bimestrales', July 1962, 300.
79. Guevara, 'Reuniones Bimestrales', July 1962, 301.
80. Guevara, 'Reuniones Bimestrales', July 1962, 303.
81. Guevara, 'Reuniones Bimestrales', March 1962, 251.
82. Eugenio Busott, interview, 9 December 2004.
83. Guevara, 'Reuniones Bimestrales', 12 September 1964, 514–15.
84. Borrego, *El Camino del Fuego*, 287.
85. Ángel Arcos Bergnes, interview, 8 December 2004.
86. Arcos, interview, 30 March 2006.
87. Plan of Integration, read by Guevara, 'Reuniones Bimestrales', September 1964, 514.
88. Guevara, 'Reuniones Bimestrales', September 1964, 514.
89. Guevara, cited by Arcos, *Evocando al Che*, 129.
90. Guevara, 'Reuniones Bimestrales', September 1964, 515.
91. Ángel Arcos Bergnes, 'Método y estilo de trabajo de Che', in *40 Aniversario Ministerio de Industrias*, La Habana: Editora Política, 2001, 27–8.
92. Guevara, 'Reuniones Bimestrales', September 1964, 519.
93. Arcos, 'Método y estilo de trabajo de Che', 27–8.
94. Borrego, *El Camino del Fuego*, 175.
95. Arcos, 'Método y estilo de trabajo de Che', 28.
96. Guevara, 'Reuniones Bimestrales', September 1964, 515–16.
97. Guevara, 'Reuniones Bimestrales', September 1964, 516–18.

98. Guevara, 'Reuniones Bimestrales', September 1964, 535 and 542.
99. Guevara, 'Reuniones Bimestrales', September 1964, 517.
100. Guevara, 'Reuniones Bimestrales', September 1964, 515.
101. Juan Borroto, interview, 26 January 2006.
102. Guevara, 'Reuniones Bimestrales', September 1964, 518.
103. Arcos, *Evocando al Che*, 130.
104. Gustavo Arango, cited by Arcos, *Evocando al Che*, 132–3.
105. Arcos complained about the timing, teasing the minister that, as branch director, if he had opportunity to be Guevara's boss he would have given him a really hard time all month. Guevara bantered back: 'Don't forget, comrade branch director, the Plan of Demotion is for one month and after that I am minister for 11 months.' Guevara cited by Arcos, interview, 8 December 2004, and *Evocando al Che*, 136.
106. Guevara, 'Conferencia en el programa televisado "Face the Nation"', in *Escritos y Discursos* Vol. 9, 329.
107. Guevara, 'Reuniones Bimestrales', 5 December 1964, 551.
108. *Nuestra Industria*, Año 3:1, 46. The prize was a selection of 'revolutionary books'.
109. Guevara, 'Reuniones Bimestrales', February 1964, 443.
110. Guevara, 'Reuniones Bimestrales', February 1964, 445.
111. Guevara, 'Reuniones Bimestrales', December 1964, 551.
112. *Manual Para Administradores de Fábricas*, sección 18, asunto 1, 1.
113. *Manual Para Administradores de Fábricas*, sección 18, asunto 1, 1.
114. *Manual Para Administradores de Fábricas*, sección 18, asunto 3, 1.
115. *Manual Para Administradores de Fábricas*, sección 18, asunto 4, 1.
116. *Manual Para Administradores de Fábricas*, sección 18, asunto 4, 1.
117. *Manual Para Administradores de Fábricas*, sección 18, asunto 4, 3–4.
118. *Manual Para Administradores de Fábricas*, sección 18, asunto 4, 5–12.
119. Guevara, 'Reuniones Bimestrales', March 1962, 180–1.
120. Guevara, 'Charla a los trabajadores del Ministerio de Industrias', 294–5.
121. Guevara, 'Charla a los trabajadores del Ministerio de Industrias', 297.
122. Ramírez, 'Reuniones Bimestrales', March 1962, 249.
123. Borrego, *El Camino del Fuego*, 169–70.
124. Jesus Suarez Gayol, 'Reuniones Bimestrales', 9 May 1964, 476.
125. Guevara, 'Reuniones Bimestrales', May 1964, 477.
126. Details about Guanahacabibes are given in Chapter 8.
127. Guevara, 'Reuniones Bimestrales', 19 May 64, 478–9.
128. Compañero, 'Reuniones Bimestrales', December 1964, 559.
129. Alberto, 'Reuniones Bimestrales', December 1964, 559–60.
130. *Memoria Anual 1964*, La Habana: Ministerio de Industrias, 1965, 107.

CHAPTER 7

1. Totalisators were not fully electronic until 1966.
2. Eugenio Busott, interview, 9 December 2004.
3. Guevara, 'Reuniones Bimestrales', 20 January 1962, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. 6, La Habana: Ministerio de Azúcar (MINAZ), 1966, 149.

4. Guevara, 'Discurso en la inauguración de la INPUD', 14 July 1964, in *Ernesto Che Guevara: Escritos y Discursos*, Vol. 8, La Habana: Ciencias Sociales, 1977, 140.
5. Unlike many other members of that first government, Boti remained in Cuba until his death in 1999.
6. US pressure led Raul Prebisch to withdraw the ECLA mission to Cuba in summer 1960. See Chapter 1 for a summary of ISI development strategy.
7. Guevara, 'Tareas industriales de la Revolución', March 1962, in *Escritos y Discursos*, Vol. 6, 103.
8. Guevara, 'Reuniones Bimestrales', 14 July 1962, 286.
9. Edison Velázquez, interview, 21 January 2006.
10. Guevara, 'Tareas industriales de la Revolución', 100.
11. Guevara, 'Discurso en la inauguración de la INPUD', 139.
12. *Memoria Anual 1964*, La Habana: Ministerio de Industrias, 1965, 78.
13. Tirso W. Sáenz, *El Che Ministro: Testimonio de un colaborador*, La Habana: Ciencias Sociales, 2005, 206.
14. *Memoria Anual 1964*, 78.
15. Guevara, 'Discurso en la inauguración de la INPUD', 139.
16. Guevara, 'Tareas industriales de la Revolución', 118.
17. Guevara, 'Reuniones Bimestrales', July 1962, 289.
18. Jorge Ruiz Ferrer, interview, 5 April 2006.
19. Guevara, 'Reuniones Bimestrales', 28 September 1962, 318–19.
20. Guevara, 'Reuniones Bimestrales', 21 December 1963, 422.
21. Guevara, 'Reuniones Bimestrales', December 1963, 421.
22. Guevara, 'Discurso en la inauguración de la INPUD', 140.
23. Tirso Sáenz, interview, 7 January 2005.
24. Guevara, 'El papel de la Universidad en el Desarrollo Económico de Cuba: Charla en la Universidad', 2 March 1960, in *Escritos y Discursos*, Vol. 4, 105–6.
25. Guevara, 'Tareas industriales de la Revolución', 105. Guevara added that the food industry and other agricultural derivatives was the task of INRA. By 'sacroquímica' Guevara was referring to chemical derivatives from sugar cane; see *Ciencia, Tecnología y Sociedad 1959–1965*, La Habana: Editorial Academia, 2003, 29.
26. María Teresa Sánchez, interview, 8 March 2006.
27. Sánchez, interview, 8 March 2006.
28. Miguel Alejandro Figueras, interview, 27 January 2006. MININD's annual report for 1964 included a plan for industrial development 1966–70, but also stated that in late 1964 work began to project 15-year development in some manufacturing branches. It is likely that this was the 'secret' project which Figueras was leading. *Memoria Anual 1964*, 70.
29. Sáenz, interview, 2005.
30. Sáenz, interview, 2005.
31. All quotes from the 1940s, cited by Marifeli Pérez-Stable, *The Cuban Revolution: Origins, Course and Legacy*, Oxford: Oxford University Press, 1999, 14 and 36.
32. Manuel Moreno Fraginals, *The Sugarmill: The Socioeconomic Complex of Sugar 1790–1869*, London: Monthly Review Press, 1976, 9. After reading an earlier publication by Fraginals, Guevara wrote: 'I don't recall having read a Latin-

American book which so combines the rigorous Marxist method of analysis, historical precision and passion ... I have no fear that *El Genio* will be a Cuban classic.' Letter to Manuel Moreno Fraginals, 6 October 1964, in Ernesto Che Guevara, *Obras 1957–1967*, Vol. 2, La Habana: Casa de Las Américas, 1970, 691.

33. 82 per cent of Cuban land is arable. In 1958, 22 per cent of arable land was used for agriculture and only 3 per cent of rural Cubans owned the land they worked. See Theodore MacDonald, *Hippocrates in Havana: An Analytical and Expository Account of the Development of the Cuban System of Healthcare from the Revolution to the Present Day*, Mexico City: Bolivar Books, 1995, 48–50.
34. US Department of Commerce, *Investment in Cuba: Basic Information for United States Businessmen*, Washington, DC: GPO, 1956, 37.
35. International Bank for Reconstruction and Development, *Report of the Mission to Cuba, July 1951*, Washington, DC: Office of the President, 5.
36. 'UNESCO data for 1958 showed that 35% of Cubans in the countryside were victims of parasitic diseases.' MacDonald, *Hippocrates in Havana*, 50.
37. Edward Boorstein, *The Economic Transformation of Cuba: A First Hand Account*, New York: Modern Reader Paperback, 1968, 205.
38. Guevara, cited by Brian H. Pollit, 'The Rise and Fall of the Cuban Sugar Economy', *Journal of Latin American Studies*, Vol. 36, 2004, 323, fn 6.
39. Actually, 'free' or world market price for sugar applied to only 10–15 per cent of internationally traded sugar, the rest being produced to quotas and sold for predetermined prices.
40. Guevara, 'Discurso en la Plenaria Nacional Azucarero', 9 February 1963, in *Ciencia, Tecnología y Sociedad 1959–1965*, 151.
41. Guevara, 'Tareas industriales de la Revolución', 108.
42. Alfredo Menéndez, interview, 11 February 2005.
43. US Department of Commerce, *Investment in Cuba*, 34.
44. Special equipment to load ships in Cuba and unload them in the destination port, meaning a huge saving on Indian jute sacks used to package the sugar. Miguel Ángel Duque de Estrada Ramos, interview, 23 February 2005.
45. 'In the 1960 harvest, 47 millions tons of cane had to be moved in 87 days to produce 5.9 million tons of sugar'. Boorstein, *Economic Transformation of Cuba*, 207.
46. Duque de Estrada, interview.
47. Sáenz, interview, 2005.
48. Duque de Estrada, interview.
49. Duque de Estrada, interview.
50. Menéndez, interview, 17 February 2005.
51. Menéndez, interview, 17 February 2005.
52. Orlando Borrego Díaz, *Che: El Camino del Fuego*, La Habana: Imagen Contemporánea, 2001, 235.
53. Duque de Estrada, interview.
54. Guevara, 'Discurso en la Plenaria Azucarera en Camaguey', 9 February 1963, in *Escritos y Discursos*, 19.
55. Guevara, 'Discurso en la Plenaria Azucarera', 31.
56. Guevara, 'Discurso en la Plenaria Azucarera', 28.

57. Duque de Estrada, interview, and Borrego, *El Camino del Fuego*, 315.
58. Borrego, *El Camino del Fuego*, 236.
59. Menéndez, interview, 17 February 2005
60. Menéndez, interview, 17 February 2005. Also, email correspondence, Ángel Arcos Bergnes, 14 December 2006.
61. Menéndez, interview, 17 February 2005.
62. Duque de Estrada, interview.
63. Duque de Estrada, interview.
64. Sáenz, *El Che Ministro*, 167.
65. Guevara, 'Discurso en la Plenaria Nacional Azucarera', 17 December 1962', in *Ciencia, Tecnología y Sociedad 1959–1965*, 127.
66. Pollit, 'The Rise and Fall of the Cuban Sugar Economy', 324.
67. Pollit, 'The Rise and Fall of the Cuban Sugar Economy', 327.
68. Fidel Castro Ruz, *Speech in the University of Havana*, on 17 November 2005.
69. Guevara, inscription at the entrance of ICIDCA in Havana.
70. Sáenz, *El Che Ministro*, 168–71.
71. Menéndez, interview, 11 February 2005.
72. Sáenz, interview, 2005. 'Too late' because at the time of the interview half of Cuba's remaining sugar mills had recently been closed down.
73. 'Informe del Instituto Cubano de Investigaciones de los Derivados de la Caña de Azúcar', 24 February 1964, in *El Che en la Revolución Cubana*, Vol. 6, 101.
74. Sáenz, *El Che Ministro*, 171.
75. Luis Gálvez, interview, 9 February 2006, and Sáenz, *El Che Ministro*, 55.
76. Borrego, *El Camino del Fuego*, 17–18.
77. Borrego, *El Camino del Fuego*, 140–1, states that Guevara received a copy of this report in January 1961, when Kennedy's presidency began.
78. 'Plugged Nickel', *Time* magazine, 5 May 1958, at <www.estimatesteel.com/nickel-in-cuba.shtml>.
79. Borrego, *El Camino del Fuego*, 141.
80. According to Benjino Lorenzo Regueira Ortega, interview, 16 January 2006, and Gálvez, interview, Presilla, who was mixed-race with a black wife, turned down tempting offers to work in the US because of racism in that country. Presilla's contribution was highlighted by several interviewees.
81. Regueira, interview. Presilla worked very well with the Soviets and was awarded the title Work Hero of the Republic of Cuba. He died in Moa in March 2006, aged 91.
82. Guevara, cited by Orlando Borrego Díaz, *Che, Recuerdos in Ráfaga*, 2nd edn, La Habana: Ciencias Sociales, 2004, 128–9.
83. Borrego, *El Camino del Fuego*, 140.
84. Before Gálvez became director of ICIDCA.
85. Gálvez, interview.
86. Gálvez traveled to England with credit provided by the USSR to buy US spare parts via an export agency run by a couple sympathetic to Cuba who acted as secret intermediaries.
87. Gálvez, interview.
88. Borrego, *El Camino del Fuego*, 144. A plane-load of accountants and economic specialists who had also been persuaded to return to Moa crashed on the journey

- in March 1962, killing 18 passengers and four crew members. Ángel Arcos Bergnes, *Evocando al Che*, La Habana: Ciencias Sociales, 2007, 32.
89. Ivette E. Torres, <<http://minerals.usgs.gov/minerals/pubs/country/1998/9509098.pdf>>.
 90. Guevara, 'Discurso en el IX Congreso Nacional Obrero', 20 November 1961, in *Ciencia, Tecnología y Sociedad 1959–1965*, 276.
 91. Sáenz, interview, 2005.
 92. Isabel Morales, *Historia de la Industria Petrolera en Cuba*, <www.energia.inf.cu/iee-mep/otros/histopetro.PDF.pdf>.
 93. 'Informe del Instituto Cubano de Recursos Minerales', 11 November 1963, in *El Che en la Revolución Cubana*, 77.
 94. 'Informe del Instituto Cubano de Recursos Minerales', 80.
 95. 'Tareas Generales para 1963', 1962, in *El Che en la Revolución Cubana*, 591.
 96. Sáenz, *El Che Ministro*, 155.
 97. *Memoria Anual 1964*, 84. Isabel Morales records 37,300 tons of petrol produced in 1964, up from 27,800 in 1959, but down from 79,200 at its height in 1956.
 98. *Memoria Anual 1964*, 84–7.
 99. In mid 1964, Suárez Gayol left to become Vice Minister of Production in the new Ministry of Sugar (MINAZ). In 1966, he went to Bolivia to join Guevara's guerrilla campaign and was the first Cuban to die there in April 1967.
 100. Guevara, 'Prologo del libro Geología de Cuba', in *El Che en la Revolución Cubana*, 741.
 101. Guevara, 'Prologo del libro Geología de Cuba', 741.
 102. Juan Váldez Gravalosa, interview, 22 February 2006. In 1965, Sáenz negotiated 20 million roubles-worth of equipment in credit from the USSR for drilling oil. Sáenz, *El Che Ministro*, 157.
 103. This was announced in mid October 2008. Production from these reserves is set to begin in late 2009.
 104. Guevara, 'Discurso en el XI Congreso Nacional Obrero', 20 November 1961, in *Ciencia, Tecnología y Sociedad 1959–1965*, 286–7.
 105. 'Tareas Generales para 1963', 591. Previously the EC of Nickel was responsible for investigating *lateritas*. In Matahambre in Pinar del Río province there was a copper mine.
 106. Tirso Sáenz, Emilio García Capote and Luís Gálvez, 'El papel del Che en el desarrollo científico y tecnológico de Cuba', in *40 Aniversario Ministerio de Industrias*, La Habana: Editora Política, 2001, 59–60; and Sáenz, *El Che Ministro*, 160–1.
 107. Sáenz, *El Che Ministro*, 163.
 108. Gálvez, interview.
 109. 'Informe del ICDIQ', 13 January 1964, in *El Che en la Revolución Cubana*, 98.
 110. Heavy Chemical branch = sugar, paper, artificial wood, basic chemicals and fertilisers. Light Chemical branch = soaps and perfumes, pharmaceuticals, rubber, plastics, glass, paint and matches.
 111. 'Tareas Generales para 1963', 591, and 'Orientaciones para 1964', in *El Che en la Revolución Cubana*, 612.

112. 'Tareas fundamental para el Ministro de Industrias para 1965', in *El Che en la Revolución Cubana*, 116.
113. Sáenz, interview, 20 February 2006. In his book, Sáenz wrote that when he asked García to see the plans he was told that there were no documents – García was designing it as he went along. *El Che Ministro*, 174.
114. Sáenz, *El Che Ministro*, 175.
115. Sáenz, interview, 2006.
116. Ángel Gómez Trueba, 'El MININD en la industrialización socialista de Cuba 1960–1965', in *40 Aniversario Ministerio de Industrias*, 43 and 45.
117. Sáenz, interview, 2006.
118. 'Informe del viceministro para el desarrollo técnico', 28 September 1964, in *El Che en la Revolución Cubana*, 143.
119. 'Tareas Generales para 1963', 590.
120. Sáenz, *El Che Ministro*, 176.
121. *Memoria Anual 1964*, 81.
122. *Memoria Anual 1964*, 81.
123. 'Orientaciones para 1964', in *El Che en la Revolución Cubana*, 611.
124. Borrego, *El Camino del Fuego*, 138.
125. 'Tecnología Mínima', book produced in Ciro Redondo, cited by Luis Hernández Serrano, 'Un tesoro de ciencia creado por el Che', *Juventud Rebelde*, 14 June 2007.
126. Guevara, cited by Hernández, 'Un tesoro de ciencia creado por el Che'. Cid died in Havana in 1997, while his son Greco Cid Lazo, an agronomist, was in Bolivia with the team searching for Guevara's remains.
127. Sáenz, *El Che Ministro*, 178.
128. Ramiro Lastre cited by Luis Hernández Serrano, 'Un hacho de Cuaba multiplicado por mil', *Juventud Rebelde*, 7 October 2004.
129. Guevara, 'Carta del Che a Don Tomás Roig', 3 July 1964, cited by Hernández, 'Un tesoro de ciencia creado por el Che'.
130. Cora Lazo Jesús, cited by Hernández, 'Un tesoro de ciencia creado por el Che'.
131. Valdés Gravalosa, interview.
132. Sáenz, *El Che Ministro*, 181.
133. 'Orientaciones para 1964', in *El Che en la Revolución Cubana*, 612.
134. Guevara, 'Reuniones Bimestrales', July 1962, 289.
135. The ICDM was set up after the campaign, described in Chapter 6, to promote workers' solutions to production problems.
136. *Memoria Anual 1964*, 116.
137. Sáenz, interview, 2006.
138. *Memoria Anual 1964*, 81.
139. *Memoria Anual 1964*, 81–2.
140. Guevara, 'Tareas industriales de la Revolución', 106–7.
141. Guevara, 'Proyecciones sociales de Ejército Rebelde', 29 January 1959, in Ernesto Che Guevara, *Obras 1957–1967*, Vol. 2, La Habana: Casa de Las Américas, 1970, 19.
142. Guevara, 'El papel de los estudiantes de tecnología y el desarrollo industrial del país', 11 May 1959, in *Ciencia, Tecnología y Sociedad 1959–1965*, 300.
143. Guevara, 'Tareas industriales de la Revolución', 106–7.
144. Guevara, 'Tareas industriales de la Revolución', 107.

145. Trueba, 'El MININD', 35.
146. 'Informe de la Empresa Consolidada de Construcción Naval', in *El Che en la Revolución Cubana*, 109–10.
147. *Memoria Anual 1964*, 10.
148. 'Informe al Gobierno de Cuba Sobre los Antecedentes del Plan Perspectiva Pesquero 1966–1970', part 2, 1967, <www.fao.org/docrep/005/53556S/53556S03.htm>.
149. Tirso W. Sáenz, María Teresa Sánchez, Emilio García Capote and Luis Galvez Taupier, Introduction, in Guevara, *Ciencia, Tecnología y Sociedad 1959–1965*, 13.
150. Trueba, 'El MININD', 44.
151. US Department of Commerce, *Investment in Cuba*, 178 and 187.
152. Guevara, 'Discurso clausura del Forum de la Energía Eléctrica', 20 November 1963, in *Escritos y Discursos*, Vol. 7, 134–5.
153. Trueba, 'El MININD', 33–4.
154. Sáenz, interview, 2005.
155. Guevara, 'Discurso clausura del Forum de la Energía Eléctrica', 135.
156. Guevara, 'Tareas industriales de la Revolución', 108.
157. Guevara, 'Conferencia a los Estudiantes de la Facultad de Tecnología', 11 May 1962, *Escritos y Discursos*, Vol. 6, 207.
158. Guevara 'Discurso en el Acto de Graduación de 296 Administradores del MININD', 21 December 1962, in *Ciencia, Tecnología y Sociedad 1959–1965*, 91.
159. Guevara, 'Discurso en el Acto de Graduación', 92.
160. Guevara, 'Conferencia a los Estudiantes', 131–2.
161. 'Tareas Generales para 1963', 589–90, and 'Orientaciones para 1964', 610; Sáenz, *El Che Ministro*, 163–4, and Sáenz et al., 'El papel del Che en el desarrollo científico y tecnológico de Cuba', 63–4.
162. *Memoria Anual 1964*, 80.
163. Trueba, 'El MININD', 44.
164. Sáenz, interview, 2006.
165. *Memoria Anual 1964*, 75.
166. Oscar Fernández Mel, interview, 10 January 2006.
167. Tomás López Jiménez, 'Los Cubanos tenemos una Inteligencia para Dominar la Computación', *Juventud Rebelde*, 9 March 2006. The group, from the School of Electrical Engineering and the Faculty of Technology in the University of Havana, evolved into today's Central Institute of Digital Research (Instituto Central de Investigaciones Digitales).
168. Cited by López, 'Los Cubanos'.
169. López, 'Los Cubanos'.
170. Guevara, 'Discurso en el Acto de Graduación', 148.
171. Orlando Borrego Díaz, interview, 23 November 2005.
172. Ruiz, interview.

CHAPTER 8

1. Tirso W. Sáenz, *El Che Ministro: Testimonio de un colaborador*, La Habana: Ciencias Sociales, 2005, 245–6.

2. The Spanish *Hombre* can be translated as 'man' or 'mankind' in English. Guevara's use relates to the latter, generic sense of the word.
3. Karl Marx, *Critique of the Gotha Programme*, Peking: Foreign Languages Press, 1972, 15.
4. Guevara, 'Qué debe ser un joven comunista', 20 October 1962, in *Ernesto Che Guevara, Obras 1957–1967*, Vol. 2, La Habana: Casa de Las Americas, 1970, 165.
5. Bertram Silverman (ed.), *Man and Socialism in Cuba: The Great Debate*, New York: Atheneum, 1971, 18–19.
6. Fidel Castro, 'Speech by Fidel Castro on October 8, 1987', in David Deutschmann (ed.), *Che: A Memoir by Fidel Castro*, Melbourne: Ocean Press, 1994, 153.
7. Orlando Borrego Díaz, International Youth Seminar: With Che's Ideas, La Habana, 23 November 2002.
8. Maria del Carmen Ariet García, *El Pensamiento Político de Ernesto Che Guevara*, Melbourne: Ocean Press, 2003, 34–6.
9. Ariet, interview, 20 January 2005.
10. Orlando Borrego Díaz, interview, 30 November 2004.
11. Ernesto 'Che' Guevara, *The Motorcycle Diaries: A Journey around South America*, trans. Ann Wright, London: Fourth Estate, 1996, 152.
12. Borrego, interview, 24 January 2005.
13. Borrego, interview, January 2005.
14. Guevara, 'Reuniones Bimestrales', 14 July 1962, 268.
15. Guevara, 'Reuniones Bimestrales', July 1962, 269.
16. See chapter three on the Great Debate for the theoretical arguments – this chapter examines the policies introduced to raise consciousness.
17. Details in Chapter 4.
18. Guevara, 'Reuniones Bimestrales', 21 December 1963, 425.
19. Guevara, 'Reuniones Bimestrales', December 1963, 424.
20. Jorge Risquet, cited by Silverman, *Man and Socialism in Cuba*, 19.
21. Carlos Tablada Pérez, *Che Guevara: Economics and Politics in the Transition to Socialism*, 2nd edn, New York: Pathfinder, 1990, 199.
22. Robert M. Bernardo, *The Theory of Moral Incentives in Cuba*, Alabama: University of Alabama Press, 1971, 58.
23. Bernardo, *Theory of Moral Incentives*, 57.
24. Bernardo, *Theory of Moral Incentives*, 60.
25. Tablada, *Che Guevara*, 199.
26. Guevara, 'Reuniones Bimestrales', 10 March 1962, 177.
27. Guevara, 'Reuniones Bimestrales', March 1962, 234.
28. Guevara, 'Reuniones Bimestrales', 9 March 1963, 354. Even advocates of the Auto-Financing System of economic management, with its emphasis on material incentives, acknowledged the importance workers gave to public recognition, especially when the award 'is to join the prime minister, comrade Fidel Castro, and other leaders of the revolutionary government on the presidential rostrum during parades and mass gatherings'. Joaquín Infante, in Silverman, *Man and Socialism in Cuba*, 168.
29. Manuel Marzoa, 'Reuniones Bimestrales', 11 July 1964, 496.
30. Guevara, 'Reuniones Bimestrales', July 1964, 500.
31. Guevara, 'Reuniones Bimestrales', July 1964, 498.

32. Reinaldo Castro, cited by Gabino Mangüela Díaz, 'Los Tiempos de Reinaldo', *Trabajadores*, 2 January 2006. Born in Oriente province in 1941 and illiterate before the Revolution, Reinaldo Castro graduated with a social science degree in 1977, becoming a member of the Cuban Council of State and the Central Committee of the Cuban Communist Party, among other important positions.
33. Guevara, 'Reuniones Bimestrales', July 1964, 498.
34. Jorge Risquet, interview, 8 February 2005.
35. Omar Fernández Cañizares, interview, 2 March 2006.
36. Ángel Arcos Bergnes, *Evocando al Che*, La Habana: Ciencias Sociales, 2007, 168. Arcos' personal account details the development of voluntary labour in MININD.
37. Ángel Arcos Bergnes, interview, 30 March 2006.
38. Guevara, cited by Arcos, *Evocando al Che*, 206.
39. Guevara, cited by Arcos, *Evocando al Che*, 207.
40. Guevara, 'En la entrega de certificados de trabajo comunista', 11 January 1964, in *Ernesto Che Guevara: Obras 1957–1967*, Vol. II, La Habana: Casa de Las Americas, 1970, 239. See also Guevara, 'Reuniones Bimestrales', December 1963, 427.
41. Guevara, 'Reuniones Bimestrales', December 1963, 427.
42. Guevara, 'Reuniones Bimestrales', December 1963, 428.
43. Guevara, 'En la entrega de certificados de trabajo comunista', 242.
44. Guevara, 'En la entrega de certificados de trabajo comunista', 242.
45. José Luis Puñales, interview, 21 January 2005.
46. In 1939 it was called the Confederación de Trabajadores de Cuba, renamed Central de Trabajadores de Cuba in 1959, but both known by the abbreviation CTC.
47. Guevara, cited by Arcos, *Evocando al Che*, 193.
48. Lazaro Peña, cited by Arcos, *Evocando al Che*, 216.
49. Guevara cited by Rosario Cueto Álvarez, interview, 20 March 2006.
50. Rosario Cueto Álvarez, in Adys Cupull and Froilan González (eds), *Entre Nosotros*, La Habana: Ediciones Abril, 1992, 118.
51. Cueto Álvarez, in Cupull and González, *Entre Nosotros*, 118.
52. Cueto Álvarez, interview.
53. Guevara, 'Reuniones Bimestrales', July 1964, 508–9.
54. Yolanda Fernández Hernández, interview, 24 March 2006.
55. Juan Borroto, interview, 26 February 2006.
56. Guevara, 'En la entrega de certificados de trabajo comunista', 238–9.
57. Arnet was 49 years old and had worked as a carpenter, an electrician, a plumber, a mechanic and a painter before the Revolution. Guevara went on to describe the work he had completed during the hours of voluntary labour, 'Discurso en la entrega de certificados de trabajo comunista en el Ministerio de Industrias', 15 August 1964, in *Ernesto Che Guevara: Escritos y Discursos*, Vol. 8, La Habana: Ciencia Sociales, 1977, 156.
58. 'The wages saved through unpaid labor apparently exceeded \$300 million in the period 1962–67 ... 1.4% of the yearly average of Cuba's national income during this period.' Carmelo Mesa-Lago, 'Economic Significance of Unpaid Labor in Socialist Cuba', *Industrial and Labor Relations Review*, Vol. 22:3, April 1969, 350–5.

59. Guevara, 'Discurso en la Entrega de Certificados de Trabajo Comunista en el Ministerio de Industrias', 155.
60. Guevara, 'En la entrega de certificados de trabajo comunista', 240–1.
61. Borrego, interview, 24 January 2005.
62. Guevara, 'Reuniones Bimestrales', December 1963, 431.
63. Guevara, 'En la entrega de certificados de trabajo comunista', 241.
64. Guevara, 'Reuniones Bimestrales', 12 September 1964, 521–2.
65. Miguel Ángel Duque de Estrada Ramos, interview, 23 February 2005.
66. Fernández Hernández, in Cupull and González, *Entre Nosotros*, 110.
67. Fernández Hernández, interview.
68. Guevara, 'Reuniones Bimestrales', July 1964, 508.
69. Guevara, 'Reuniones Bimestrales', December 1963, 431.
70. Guevara, 'Reuniones Bimestrales', September 1964, 521–2.
71. *Memoria Anual 1961–1962*, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. 6, La Habana: Ministerio de Azúcar, 1966, 684.
72. Fernández Hernández, interview.
73. Miguel Alejandro Figueras, interview, 27 January 2007.
74. *Memoria Anual 1961–1962*, 684.
75. Cueto Álvarez, interview.
76. Risquet, interview.
77. Eugenio Busott, interview, 9 December 2004.
78. Guevara, 'Reuniones Bimestrales', December 1964, 562–3.
79. Bernardo, *Theory of Moral Incentives*, 1964.
80. See Chapter 10.
81. Jacqueline Kaye (ed.), *The New Man in Cuba*, London: The Britain-Cuba Association, 1969, 1.
82. Silverman, *Man and Socialism in Cuba*, 19.
83. Jorge Ruiz Ferrer, interview, 5 April 2006.
84. Edison Velázquez, interview, 19 January 2006.
85. Velázquez, interview, 19 January 2006. On return to Havana, Velázquez was substituted as head of Inspections, but was soon named as the Department's delegate in Las Villas – a sign of Guevara's confidence in him given the political problems in that province. In 1963, Velázquez became director of the EC of Nickel, an industrial sector which Guevara prioritised. Velázquez tearfully admitted that he remained bitter with Guevara, as is evident by their arguments in the MININD bimonthly meetings.
86. 'First we built a school of fisheries. In the north of the Cayo we put industry to tin and salt the fish. Later, when the military situation was less precarious, we turned the east of the island into a tourist centre with a hotel and wooden cabañas. Thus, I converted it into a centre of awards. At one point all of the national schools of Cuba sent people there for the weekend as an award.' Ruiz, interview.
87. Ruiz, interview.
88. Report cited by Arcos, *Evocando al Che*, 258.
89. Ruiz, interview.
90. Borroto, interview.
91. Arcos, interview, 2006.
92. Arcos, interview, 2006.

93. Guevara, 'Reuniones Bimestrales', 20 January 1962, 166.
94. Guevara, 'Reuniones Bimestrales', January 1962, 167.
95. Cited by Arcos, *Evocando al Che*, 254.
96. Guevara, 'Reuniones Bimestrales', July 1962, 264–5.
97. Guevara, 'Reuniones Bimestrales', July 1962, 257.
98. Guevara, 'Reuniones Bimestrales', July 1962, 261.
99. Vincente, 'Reuniones Bimestrales', July 1962, 264.
100. Guevara, 'Reuniones Bimestrales', July 1962, 259.
101. Marzoa, 'Reuniones Bimestrales', July 1962, 264.
102. Guevara, 'Reuniones Bimestrales', July 1962, 259. It is not clear what administrative error Agüero had committed.
103. Agüero, 'Reuniones Bimestrales', July 1962, 264.
104. Guevara, 'Reuniones Bimestrales', July 1962, 258–9.
105. María Teresa Sánchez, interview, 8 March 2006.
106. Arcos, interview, 2006. Pico Turquino is the highest mountain in Cuba, where the Rebel Army had a base during the war against Batista. Cubans go up there in homage to the revolutionaries and as a challenge of fitness.
107. Arcos, interview, 2006. Both the individuals Arcos spoke with had been scholarship students who caused sexual scandals in the host country and were sent back in disgrace.
108. Velázquez, interview, 19 January 2006.
109. Sánchez, in Cupull and González, *Entre Nosotros*, 82.
110. Puñales, interview.
111. Arcos, interview, 2006.
112. Cueto Álvarez, interview.
113. Arcos, interview, 2006.
114. See Ernesto 'Che' Guevara, *Guerrilla Warfare*, London : Pelican Books, 1970.
115. Ben Plotkin, 'Freud, Politics, and the Portenos: The Reception of Psychoanalysis in Buenos Aires, 1910–1943', *Hispanic American Historical Review*, Vol. 77:1, February 1997, 73.
116. Alberto Granado, cited by Ariet, *El Pensamiento Político de Ernesto Che Guevara*, 30.
117. Orlando Borrego Díaz, Seminar, 'Los pensamientos internacionalistas de Ernesto Che Guevara', *Diplomado: Pensamiento Latinoamericano*, Che Guevara. Facultad Latinoamericana de Ciencias Sociales (FLACSO), University of Havana, 18 January 2006.
118. Norma Marrera, interview, 31 January 2005.
119. Nury Cao, interview, 11 February 2005. See also Milagros Román González, 'El Che y la Andragogía en la Capacitación de los Cuadros', <www.sld.cu/galerias/pdf/sitios/infodir/che_temas.pdf>, 15.
120. Torroella, who is considered to be a founder of psychology in Cuba, agreed to meet for an interview, but sadly died before this could take place.
121. Apparently this did not include Torroella and Castello.
122. Cao, interview.
123. Guevara, 'Reuniones Bimestrales', March 1962, 184–5. See Chapter 6 for details about the School for Administrators.
124. Guevara, 'Reuniones Bimestrales', 12 October 1963, 407–8.

125. Orlando Borrego Díaz, *El Camino del Fuego*, La Habana: Imagen Contemporanea, 2001, 66–7.
126. Arcos, interview, 2006.
127. Puñales, interview.
128. Borroto, interview.
129. Borrego, *Diplomada*, 18 January 2006.
130. Cao, interview.
131. Guevara, ‘Reuniones Bimestrales’, 10 August 1963, 371. He was responding to Velázquez’s claim that directors did not give their real opinions or explain production problems for fear of Guevara’s reaction. However, with over 40 years’ hindsight, Velázquez admitted that this snipe was part of his polemic with Guevara since being sentenced to Cayo Largo in 1959.
132. Guevara, ‘Reuniones Bimestrales’, December 1964, 561–2.
133. Fernández Hernández, interview.
134. Borroto, interview.
135. Marrera, interview.
136. Information from Marrera, interview.
137. Marrera, interview.
138. Marrera, interview.
139. Marrera, interview.
140. *Manual Para Administradores de Fábricas*, 10 June 1964, 2nd edn (reprint of 1964 edn), La Habana: Ministerio de Industrias, sección 6, asunto 1, 1–2.
141. Marrera, interview.
142. Borrego, interview, 16 November 2004.
143. Marrera, interview.
144. Borrego, *El Camino del Fuego*, 220. Vice Minister Jesús Suárez Gayol was the most popular leader.
145. Marrera, interview.
146. Borrego, interview, 23 November 2004.
147. Neither Borrego nor Hart had a copy of the results, and they were not tracked down during the research.
148. Marrera, interview.
149. Marrera, interview, 31 January 2005.
150. Guevara, ‘Reuniones Bimestrales’, December 1964, 562.

CHAPTER 9

1. Guevara’s departure from Cuba is discussed in Chapter 10.
2. In the early 1950s, Stalin instructed the USSR Academy of Sciences to produce an accessible manual outlining the principles themes of socialist political economy. It was revised various times following Stalin’s death.
3. Ernesto ‘Che’ Guevara, ‘Reuniones Bimestrales’, 5 December 1964, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. VI, La Habana: Ministerio de Azúcar, 1966, 570.
4. Guevara, ‘Reuniones Bimestrales’, December 1964, 566. Hugo Blanco Galdos led a peasant trade union movement and an uprising of Quechua indigenous people in Cuzco in the early 1960s. He was captured in 1963 and condemned to death. Guevara joined the international solidarity campaign opposing the sentence,

which was subsequently commuted to 25 years' imprisonment. Released into exile in 1976, Blanco returned to Peru in 1978 to found the Workers Revolutionary Party, serving in the Peruvian Senate until Alberto Fujimori's coup in 1992 forced him into exile again. He is currently director of the Cuzco-based newspaper *Lucha Indígena*.

5. Guevara, 'Reuniones Bimestrales', December 1964, 567.
6. Guevara, 'Reuniones Bimestrales', December 1964, 567.
7. Guevara, 'Reuniones Bimestrales', December 1964, 566.
8. Guevara, 'Reuniones Bimestrales', December 1964, 567.
9. Guevara, 'Reuniones Bimestrales', December 1964, 566.
10. Guevara, 'Reuniones Bimestrales', December 1964, 569.
11. Guevara, *Apuntes Críticos a la Economía Política*, Centro de Estudios Che Guevara and Ocean Press, La Habana: Editorial de Ciencias Sociales, 2006, 9.
12. Guevara, *Apuntes*, 10.
13. Guevara, *Apuntes*, 11–12.
14. Guevara, *Apuntes*, 12.
15. Guevara, *Apuntes*, 13.
16. Guevara, *Apuntes*, 15–16.
17. Guevara, *Apuntes*, 16.
18. Guevara, *Apuntes*, 17.
19. Guevara, *Apuntes*, 17.
20. Edison Velázquez, interview, 21 January 2006.
21. Guevara, 'Síntesis Biográfica de Marx y Engels', *Apuntes*, 29–52.
22. Guevara's notes directed him to the work of Paul Sweezy, Lin Piao and Xhinuy.
23. Guevara, *Apuntes*, 26. This introduction also appears in Orlando Borrego Díaz, *Che: El Camino del Fuego*, La Habana: Imagen Contemporánea, 2001, 381–3.
24. Guevara, *Apuntes*, 26–7.
25. Guevara, *Apuntes*, 27.
26. Guevara, *Apuntes*, 28.
27. Guevara, *Apuntes*, 59.
28. Guevara, *Apuntes*, 64.
29. Guevara, *Apuntes*, 67.
30. Guevara, *Apuntes*, 63.
31. Guevara, *Apuntes*, 77.
32. Guevara, *Apuntes*, 80.
33. Guevara, *Apuntes*, 83–4.
34. Guevara, *Apuntes*, 166.
35. Guevara, *Apuntes*, 140.
36. Guevara, *Apuntes*, 54–5.
37. Guevara, *Apuntes*, 55.
38. *Manual*, in Guevara *Apuntes*, 57.
39. Guevara, *Apuntes*, 104.
40. Lenin, cited by the Soviet *Manual*, cited by Guevara, *Apuntes*, 107.
41. Guevara, *Apuntes*, 108.
42. Guevara, *Apuntes*, 168.

43. *Manual*, in Guevara, *Apuntes*, 168–9.
44. Guevara, *Apuntes*, 169.
45. Guevara, *Apuntes*, 170.
46. Guevara, *Apuntes*, 171.
47. Guevara, *Apuntes*, 116.
48. Guevara, *Apuntes*, 119.
49. Guevara, *Apuntes*, 180.
50. Guevara, *Apuntes*, 182.
51. *Manual*, in Guevara, *Apuntes*, 187.
52. Guevara, *Apuntes*, 187.
53. *Manual*, in Guevara, *Apuntes*, 110.
54. Guevara, *Apuntes*, 111.
55. *Manual*, in Guevara, *Apuntes*, 96 and 98.
56. Guevara, *Apuntes*, 98.
57. Guevara, *Apuntes*, 90.
58. *Manual*, in Guevara, *Apuntes*, 101.
59. Guevara, *Apuntes*, 102.
60. Guevara, *Apuntes*, 100.
61. Guevara, *Apuntes*, 89 and 179.
62. Guevara, *Apuntes*, 102–3.
63. Guevara, *Apuntes*, 103.
64. Guevara, *Apuntes*, 198.
65. Guevara, *Apuntes*, 126.
66. Guevara, *Apuntes*, 128.
67. Guevara, *Apuntes*, 103.
68. Guevara, *Apuntes*, 125.
69. It is not clear whether this is cited as a law or a tendency.
70. Guevara, *Apuntes*, 129.
71. Guevara, *Apuntes*, 131.
72. Guevara, *Apuntes*, 132–3.
73. Guevara, *Apuntes*, 133.
74. Guevara, *Apuntes*, 188.
75. Guevara, *Apuntes*, 112.
76. *Manual*, in Guevara, *Apuntes*, 195.
77. Guevara, *Apuntes*, 195.
78. Guevara, *Apuntes*, 195.
79. Guevara, *Apuntes*, 118.
80. Guevara, *Apuntes*, 135.
81. Guevara, *Apuntes*, 136.
82. Guevara, *Apuntes*, 154.
83. Lenin, cited by the Soviet *Manual*, cited by Guevara, *Apuntes*, 156.
84. Guevara, *Apuntes*, 157.
85. Guevara, *Apuntes*, 139.
86. Guevara, *Apuntes*, 99.
87. Guevara, *Apuntes*, 112–13.
88. Guevara, *Apuntes*, 114.
89. Guevara, *Apuntes*, 58.
90. Guevara, *Apuntes*, 74.

91. Guevara, *Apuntes*, 82.
92. Guevara, *Apuntes*, 83.
93. Guevara, *Apuntes*, 87.
94. Guevara, *Apuntes*, 101.
95. Guevara, *Apuntes*, 113.
96. Guevara, *Apuntes*, 61–2.
97. Guevara, *Apuntes*, 86.
98. Guevara, *Apuntes*, 123–4.
99. Guevara, *Apuntes*, 100.
100. Guevara, *Apuntes*, 123.
101. Guevara, *Apuntes*, 138.
102. Guevara, *Apuntes*, 184.
103. Guevara, *Apuntes*, 91–2.
104. Guevara, *Apuntes*, 92.
105. Guevara, *Apuntes*, 185–6.
106. ‘There should be no more talk about developing mutually beneficial trade based on prices forced on the backward countries by the law of value and the international relations of unequal exchange that result from the law of value ... The socialist countries have the moral duty to put an end to their tacit complicity with the exploiting countries of the West.’ Guevara, ‘At the Afro-Asian conference in Algeria’, in David Deutschmann (ed.), *Che Guevara Reader: Writings on Guerrilla Strategy, Politics & Revolution*, 2nd edn, Melbourne: Ocean Press, 1998, 303.
107. Guevara, *Apuntes*, 179.
108. Guevara, *Apuntes*, 90.
109. Guevara, *Apuntes*, 130.
110. Guevara, *Apuntes*, 189.
111. Guevara, *Apuntes*, 189.
112. Guevara, *Apuntes*, 193.
113. Guevara, *Apuntes*, 192.
114. Guevara, *Apuntes*, 172–3.
115. Guevara, *Apuntes*, 120.
116. Guevara, *Apuntes*, 194.
117. Velázquez, interview, 21 January 2006.

CHAPTER 10

1. An edited version of this chapter will appear as ‘Che Guevara’s Enduring Legacy: Not the *Foco*, but the Theory of Socialist Transition’ in a special issue of *Latin American Perspectives* (Vol. 36:2, March 2009) commemorating the 50th anniversary of the Cuban Revolution.
2. Tirso Sáenz, interview, 7 January 2005.
3. The question of Guevara’s departure was raised in all the interviews carried out during the research.
4. Edison Velázquez, interview, 21 January 2006.
5. Juan Alberto Castellanos Villamar, interview, 1 March 2006.
6. Including the election of a radical politician in 1963 and the CIA’s infiltration of the revolutionary groups.

7. Ernesto 'Che' Guevara, 'Cuba, su economía, su comercio exterior su significado en el mundo actual', 2 December 1964, in *Ernesto 'Che' Guevara: Escritos y Discursos*, Vol. 8, La Habana: Ciencias Sociales, 245.
8. It was within the Vice Ministry of Light Industry that voluntary labour was initially and most extensively promoted in industry. This and the following information is from *Memoria Anual 1964*, La Habana: Ministerio de Industrias, 1965. Gross national social production grew by an average of 1.9 per cent between 1961 and 1966. See Fidel Castro, *Report of the Central Committee of the CPC to the First Congress*, La Habana: Department of Revolutionary Orientation, 1977, 72.
9. Alfredo González Gutiérrez, interview, 27 December 2004.
10. Guevara, in *Memoria Anual 1964*, 106.
11. Andrew Zimbalist, 'An Overview', in Zimbalist (ed.), *Cuban Political Economy: Controversies in Cubanology*, London: Westview Press, 1988, 9. CMEA was a trade body for socialist countries. In his speech to the United Nations in November 2005, Cuba's Foreign Minister Felipe Pérez Roque estimated that the US blockade had cost the Cuban economy over \$82 billion over nearly half a century. Roque, 'Informe de Cuba sobre la Resolución 60/12 de la Asamblea General de las Naciones Unidas', *Juventud Rebelde*, Tabloide Especial, No. 8, 2006.
12. Guevara, 'On the Budgetary Finance System' (BFS), in Bertram Silverman (ed.), *Man and Socialism in Cuba: The Great Debate*, New York: Atheneum, 1971, 135.
13. Guevara, 'Discurso Clausura del Forum de la Energía Eléctrica', 20 November 1963, in *Escritos y Discursos*, Vol. 7, 134.
14. Orlando Borrego Díaz, interview, 2 April 2006.
15. See Appendix 2 for examples.
16. For example, Carlos Rafael Rodríguez, 'Sobre la contribución del Che al desarrollo de la economía cubana', in David Deutschmann and Javier Salado (eds), *Ernesto Che Guevara: Gran Debate: Sobre la economía en Cuba 1963–1964*, La Habana: Ciencias Sociales, 2003, 358–89.
17. María Teresa Sánchez, interview, 8 March 2006.
18. Faure Chómon Mediavilla, interview, 16 February 2005.
19. Fidel Castro, *Report of the Central Committee of the CPC*, 149–52.
20. Fidel Castro, *Report of the Central Committee of the CPC*, 149–51.
21. González, interview, 1 February 2006.
22. Fidel Castro, 'Discurso pronunciado por Fidel Castro el 8 de Octubre de 1987', in Deutschmann and Salado, *Gran Debate*, 400.
23. Fidel Castro, 'Discurso pronunciado por Fidel Castro', 399.
24. The Mack Amendment of October 1990, the Torricelli Act in October 1992 and the Helms-Burton Act of March 1996.
25. Official Cuban figures put economic growth from 2005 to 2007 at between 7.5 per cent and 12.5 per cent. Economist Intelligence Unit estimates for the same period are 6.5–9.5 per cent.
26. González, interview, 2004.
27. Among them José Luis Rodríguez, Minister of the Economy, and Jesús García Pastor Brigos of the Institute of Philosophy in the Ministry of Science, Technology and the Environment. García is leading a major research project with policy

implications into socialist property relations. José Luis Puñales (interview, 21 January 2005) and Francisco Buron Seña (interview, 22 February 2005) compared recent measures to recentralise state finances with Guevara's BFS. They both worked under Guevara in MININD and today work at the Consultoría de la Asociación de Economistas y Contadores de Cuba (Consultancy of the Association of Cuban Economists and Accountants).

28. Fidel Castro, 'Discurso pronunciado por Fidel Castro', 408–9.
29. See Chapter 2.
30. The goal is to return to a sole currency when the value of the Cuban peso rises against the US dollar. The precondition to this is a rise in domestic production and productivity.
31. Emily Morris, *Country Report May 2007*, London: Economist Intelligence Unit, 19.
32. Fidel Castro, in Ignacio Ramonet (ed.), *My Life*, London: Allen Lane, 2007, 387.
33. The Spanish word is *rentabilidad*, not *ganancia*.
34. Carmelo Mesa-Lago, 'The Cuban Economy in 2006–2007: Fidel's Legacy and Raul's Policies', paper presented at the Association for the Study of the Cuban Economy annual conference, 2–4 August 2007, 15, and Emily Morris, *Country Profile*, London: Economist Intelligence Unit, 2007, 18.
35. Fidel Castro, 'Speech to Student Leaders, University of Havana', 17 November 2005, *Juventud Rebelde: Tabloide Especial*, No. 11. This increase in energy capacity was a precondition for reforms announced in spring 2008 legalising the sale of computers, DVDs and other high-electricity consumption goods to Cuban consumers. The Energy Revolution also addressed national security issues, reducing Cuba's vulnerability to attacks on its power-generating facilities.
36. Guevara, 'Reuniones Bimestrales', 12 September 1964, in *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. 6, La Habana: Ministerio de Azúcar, 1966, 533.
37. Felipe Pérez Roque, 'Speech to the National Assembly', Havana, 23 December 2005.
38. Raúl Castro, 'Speech to the National Assembly', 11 July 2008.
39. Raúl Castro, 'Speech in Camagüey', 26 July 2007.
40. Raul Castro, 'Speech in Camagüey'.
41. Raúl Castro, *Assembly*.
42. For an example see Rory Carroll, 'Cuban workers to get bonuses for extra effort', *Guardian*, 13 June 2008.
43. Cited by Mesa-Lago, 'The Cuban Economy in 2006–2007', 13.
44. Raúl Castro, 'Speech to the National Assembly'.
45. Raúl Castro, 'Speech to the National Assembly', and London Metropolitan University, *Cuban Reforms Summary*, 4 April 2008.
46. Aurelio Alonso, interview in *Progreso Weekly*, 11–17 September 2007.
47. Pedro Monreal González, interview in *La Noche Se Mueve*, Montreal, Canada, 25 September 2007.
48. Guevara, *Apuntes Críticos de la Economía Política*, La Habana: Ciencias Sociales, 2006, 187.
49. José Luís Rodríguez, 'Speech to the Ministry of the Economy', 8 October 2007.

50. Raúl Castro, 'Speech on 15 October 2007', *Juventud Rebelde*, 16 October 2007, 3.
51. In January 2008, the Bank of ALBA was launched to combat this threat and finance projects of economic integration, infrastructural developments and social, educational, cultural and health programmes in member nations, without loan conditions and functioning on the basis of consensus.
52. Hugo Chávez, interview on Cuban television, 14 October 2007.
53. Borrego, interview, London, 5 March 2008.
54. Partido Socialista Unido de Venezuela (PSUV), Article 4, 'Draft Program and Principles', 23 January 2008.
55. Borrego, interview.

APPENDIX 2

1. This section does not include all the individuals interviewed during the research. See the bibliography for the full list.
2. Possibly by accident – Chibás shot himself whilst railing against the corruption of government during his live weekly radio show.
3. British Embassy in Havana, *Top Personalities in Cuba*, Havana, 20 September 1967, National Archives document FCO 7/529 211465.
4. British Embassy in Havana, *Top Personalities in Cuba*, 1967.

Bibliography

PRIMARY SOURCES

Works by Ernesto 'Che' Guevara

- Casaus, Victor (ed.). *Self Portrait: Che Guevara*. Centro de Estudios Che Guevara and Ocean Press. Melbourne: Ocean Press, 2004.
- Deutschmann, David (ed.). *Che Guevara Reader: Writings on Guerrilla Strategy, Politics & Revolution* (2nd edn). Melbourne: Ocean Press, 1998.
- Deutschmann, David (ed.). *Che Guevara and the Cuban Revolution: Writings and Speeches of Ernesto Che Guevara*. Sydney: Pathfinder/Pacific and Asia Sydney, 1987.
- Fair Play for Cuba Committee. *Guevara, Che. Economic Planning in Cuba and Fidel Castro: May Day Speech*. Los Angeles: Fair Play for Cuba Committee, 1961.
- Gerassi, John. *Venceremos! The Speeches and Writings of Che Guevara*. London: Panther Books, 1969.
- Guevara, Ernesto Che. *América Latina: Despertar de un Continente*. La Habana: Ciencias Sociales, 2004.
- Guevara, Ernesto Che. *Apuntes Críticos a la Economía Política*. Centro de Estudios Che Guevara and Ocean Press. La Habana: Editorial de Ciencias Sociales, 2006.
- Guevara, Ernesto Che. *'Che' Guevara: Back on the Road. A Journey Through Central America*, trans. Patrick Camiller. London: Vintage, 2000.
- Guevara, Ernesto Che. *Ciencia, Tecnología y Sociedad (1959–1965)*. Colectivo de compiladores. La Habana: Editorial Academia. 2003.
- Guevara, Ernesto Che. *Escritos y Discursos*, Vols 1–9. La Habana: Editorial de Ciencia Sociales, 1977.
- Guevara, Ernesto Che. *Guerrilla Warfare* (3rd edn). London: Pelican Books, 1970.
- Guevara, Ernesto Che. 'Indonesia y la sólida unidad de su pueblo', *Verde Olivo*, 26 October 1959, <<http://cheguevara.cubasi.cu>>.
- Guevara, Ernesto Che. 'Intercambio comercial y amistad con Ceilán y Pakistán', *Verde Olivo*, 16 November 1959, <<http://cheguevara.cubasi.cu>>.
- Guevara, Ernesto Che. 'La India: país de grandes contrastes', *Verde Olivo*, 12 October 1959, <<http://cheguevara.cubasi.cu>>.
- Guevara, Ernesto Che. 'La República Árabe Unida: un ejemplo', *Verde Olivo*, 5 October 1959, <<http://cheguevara.cubasi.cu>>.
- Guevara, Ernesto Che. *Obras 1957–1967*, Vols 1–2. La Habana: Casa de Las Américas, 1970.
- Guevara, Ernesto Che. 'Recúperese Japón de la tragedia atómica', *Verde Olivo*, 19 October 1959, <<http://cheguevara.cubasi.cu>>.
- Guevara, Ernesto. *Temas Económicas*. La Habana: Editorial de Ciencias Sociales. 1988.
- Guevara, Ernesto Che. *The Motorcycle Diaries: A Journey Through South America*, trans. Ann Wright. London: Fourth Estate, 1996.

Guevara, Ernesto Che. 'Yugoslavia, en pueblo que lucha por sus ideas', *Verde Olivo*, 26 November 1959, <<http://cheguevara.cubasi.cu>>.

Turner Martí, Lidia. *Ernesto Che Guevara y Las Universidades*. La Habana: Felix Varela, 2003.

Waters, Mary-Alice (ed.). *To Speak the Truth: Why Washington's Cold War against Cuba Doesn't End. Fidel Castro and Ernesto Che Guevara* (2nd edn). New York: Pathfinder, 1997.

In Cuba

Ministerial documents

Ministerio de Azúcar. *El Che en la Revolución Cubana: Ministerio de Industrias*, Vol. VI. La Habana: Ministerio de Azúcar, 1966.

Ministerio de Economía y Planificación. *Reconstrucción y Análisis de Estadísticas Cubanas 1959–1975*. La Habana. Declassified in 1988.

Ministerio de Industrias. *Informe Sobre los Elementos Requeridos Para Crear una Empresa Industrial Modelo y de los Metodos de Trabajo que Deben Aplicarse en los Distintos Frentes de Actividades*. La Habana, 15 April 1965.

Ministerio de Industrias. *Manual Para Administradores de Fábricas*, 10 June 1964 (2nd edn). La Habana, 1988. Reprint of 1964 edition.

Ministerio de Industrias, *Memoria Anual 1964*. La Habana: Ministerio de Industrias, 1965.

Ministerio de Industrias. *Organigrama*, La Habana, 1964.

Ministerio de Relaciones Internacionales. *Declaraciones Publicas del Che en sus Viajes a Ginebra y Nueva York: material grabada en videotape con Ernesto Guevara en la ciudad de Nueva York el 13 de Diciembre de 1964, después de una programa 'en vivo' de FACE THE NATION*. La Habana: Ministerio de Relaciones Internacionales, 1964.

Interviews, seminars, presentations and speeches

47 Aniversario de la llegada de la Columna 8 de Ernesto Che Guevara a La Cabaña. Various speakers. 3 January 2006, Havana.

45 Aniversario del Formación del Ministerio de Industrias. Various speakers. 23 February 2006, Havana.

Alarcón de Quesada, Ricardo. *Presentación del libro Ernesto Che Guevara: Apuntes Críticos a la Economía Política*. 15 Feria Internacional del Libros, 4 February 2006, Havana.

Arcos Bergnes, Ángel. Interview, 8 December 2004, Havana.

Arcos Bergnes, Ángel. Interview, 30 March 2006, Havana.

Borrego Díaz, Orlando. Interview, 16 November 2004, Havana.

Borrego Díaz, Orlando. Interview, 23 November 2004, Havana.

Borrego Díaz, Orlando. Interview, 30 November 2004, Havana.

Borrego Díaz, Orlando. Interview, 24 January 2005, Havana.

Borrego Díaz, Orlando. Interview, 28 January 2005, Havana.

Borrego Díaz, Orlando. Interview, 15 March 2006, Havana.

Borrego Díaz, Orlando. Interview, 31 March 2006, Havana.

Borrego Díaz, Orlando. Interview, 5 March 2008, London.

- Borrego Díaz, Orlando. Seminar. International Youth Seminar: With Che's Ideas. 23 November 2002, Havana.
- Borrego Díaz, Orlando. Seminar, Los pensamientos económicos de Ernesto Che Guevara. Diplomado: Pensamiento Latinoamericano, Che Guevara. Facultad Latinoamericana de Ciencias Sociales (FLACSO), 17 January 2006, Havana University, Havana.
- Borrego Díaz, Orlando. Seminar, Los pensamientos internacionalistas de Ernesto Che Guevara. Diplomado: Pensamiento Latinoamericano, Che Guevara. Facultad Latinoamericana de Ciencias Sociales (FLACSO), 18 January 2006, Havana University, Havana.
- Borroto, Juan. Interview, 26 January 2006, Havana.
- Buron Seña, Francisco. Interview, 22 February 2005, Havana.
- Busott, Eugenio. Interview, 9 December 2004, Havana.
- Cao, Nury. Interview, 11 February 2005, Havana.
- Cao, Nury. Written interview response, February 2005, Havana.
- Castellanos, Alberto. Interview, 1 March 2006, Havana.
- Chómon Mediavilla, Faure. Interview, 16 February 2005, Havana.
- Club Martiana. Lecture and discussion programme for members of the Asociación de Combatientes. Raul Izquierdo Canosa, Armando Hart and various speakers. La Llegada de Granma en Cuba, 11 February 2005, Havana University, Havana.
- Club Martiana. Lecture and discussion programme for members of the Asociación de Combatientes. Armando Hart and various speakers. La formación de Movimiento 26 de Julio, 11 March 2005, Havana University, Havana.
- Club Martiana. Lecture and discussion programme for members of the Asociación de Combatientes. Various speakers. La primer gobierno después el enero 1959, 17 February 2006, Havana University, Havana.
- Club Martiana. Lecture and discussion programme for members of the Asociación de Combatientes. Various speakers. La primer gobierno después el enero 1959, segundo parte, 17 March 2006, Havana University, Havana.
- Codina Jiménez, Alexis. Interview, 27 January 2005, Havana.
- Cueto Álvarez, Rosario. Interview, 20 March 2006, Havana.
- Duque de Estrada Ramos, Miguel Ángel. Interview, 23 February 2005, Havana.
- Estrada, Ulises. Interview, 14 February 2005, Havana.
- Fernández Cañizares, Omar. Interview, 2 March 2006, Havana.
- Fernández Hernández, Yolanda. Interview, 24 March 2006, Havana.
- Fernández Mel, Oscar. Interview, 10 January 2006, Havana.
- Figueras, Miguel Alejandro. Interview, 27 January 2006, Havana.
- Gálvez, Luis. Interview, 9 February 2006, Havana.
- Gálvez, Luis. Seminar Los pensamientos técnicos y científicos de Ernesto Che Guevara. Diplomado: Pensamiento Latinoamericano, Che Guevara. Facultad Latinoamericana de Ciencias Sociales (FLACSO), 20 February 2006, Havana University, Havana.
- González Gutiérrez, Alfredo. Interview, 27 December 2004, Havana.
- González Gutiérrez, Alfredo. Interview, 1 February 2006, Havana.
- Granado, Alberto. Interview, 24 February 2005, Havana.
- Guzmán, Oscar. Interview, 10 April 2002, Havana.
- Hart Dávalos, Armando. Interview, 17 February 2005, Havana.
- Hart Dávalos, Armando. Interview, 14 March 2006, Havana.
- Herrera Hernández, Francisco. Interview, 11 March 2006, Havana.

- Infante, Joaquín. Interview, 18 January 2005, Havana.
- Jiménez Velo, Juan Raimundo. Interview, 6 February 2006, Havana.
- Jiménez Velo, Juan Raimundo. Written interview response, February 2006, Havana.
- Lechuga Hevia, Carlos. Interview, 16 March 2006, Havana.
- Lugioyo, Martha. Interview, 27 March 2006, Havana.
- Luis Puñales, José. Interview, 21 January 2005, Havana.
- Machado, Darío. Interview, 12 January 2005, Havana.
- March, Aleida. Interview, 20 January 2005, Havana.
- Marrera, Norma. Interview, 31 January 2005, Havana.
- Menéndez, Alfredo. Interview, 11 February 2005, Havana.
- Menéndez, Alfredo. Interview, 17 February 2005, Havana.
- Oltuski, Enrique. Interview, 12 January 2005, Havana.
- Oltuski, Enrique. Interview, 15 February 2006, Havana.
- Oltuski, Enrique. Presentación del libro por Tirso W Sáenz, *El Che Ministro: Testimonio de un Colaborador*. 15 Feria Internacional del Libros. 10 February 2006, Havana.
- Pérez Rodríguez, Orlando. Interview, 14 March 2006, Havana.
- Regueira Ortega, Benjino Lorenzo. Interview, 16 January 2006, Havana.
- Risqué Valdés, Jorge. Interview, 8 February 2005, Havana.
- Rodríguez Camps, Arnol. Interview, 7 January 2005, Havana.
- Ruiz Ferrer, Jorge. Interview, 5 April 2006, Havana.
- Sáenz, Tirso W. Interview, 7 January 2005, Havana.
- Sáenz, Tirso W. Interview, 20 February 2006, Havana.
- Sánchez, María Teresa. Interview, 8 March 2006, Havana.
- Segarra Padrón, Teresa. Interview, 8 March 2006, Havana.
- Valdés Gravalosa, Juan. Interview, 22 February 2006, Havana.
- Vascos González, Fidel Emilio. Interview, 16 February 2006, Havana.
- Velázquez, Edison. Interview, 19 January 2006, Havana.
- Velázquez, Edison. Interview, 21 January 2006, Havana.
- Vilasaca, Salvador. Unpublished interview with Tatiana Martínez Hernández, 1994, Havana.
- Villegas, Harry. Interview, 22 March 2006, Havana.
- Villegas, Harry. Seminar. *Los pensamientos militares de Ernesto Che Guevara*. Diplomado: Pensamiento Latinoamericano, Che Guevara. Facultad Latinoamericana de Ciencias Sociales (FLACSO), 20 February 2006, Havana University, Havana.
- Zorrilla, Mario. Interview, 26 March 2006, Havana.

Memoirs, personal testimony and historical accounts

- 40 *Aniversario Ministerio de Industrias*. La Habana: Editora Política, 2001.
- Acevedo, Enrique. *Descamisado*. La Habana: Ciencias Sociales, 2000.
- Arcos Bergnes, Ángel. *Evocando al Che*. La Habana: Ciencias Sociales, 2007.
- Batista Zaldivar, Fulgencio. *Cuba Betrayed*. New York: Vantage Press, 1962.
- Borrego Díaz, Orlando. *Che: El Camino del Fuego*. La Habana: Imagen Contemporánea, 2001.
- Borrego Díaz, Orlando. *Che, Recuerdos en Ráfaga*. La Habana: Ciencias Sociales, 2004.
- Borrego Díaz, Orlando. *Rumbo al Socialismo: Problemas del Sistema Económico y la Dirección Empresarial*. La Habana: Ciencias Sociales, 2006.

- Borrego Díaz, Orlando and Carlos Bernal. 'El Che y los jóvenes'. Draft article for publication in an Italian newspaper, May 2006.
- Buch Rodríguez, Luis M. and Reinaldo Suárez Suárez. *Otros Pasos del Gobierno Revolucionario Cubano* (2nd edn) La Habana: Ciencias Sociales, 2002.
- Buron Seña, Francisco. Radio interview (taped). Radio Habana, 2004.
- Cañizares, Omar Fernández. *Un Viaje Histórico con el Che*. La Habana: Ciencias Sociales, 2005.
- Castro Ruz, Fidel. *Report of the Central Committee of the CPC to the First Congress*. La Habana: Department of Revolutionary Orientation, 1977.
- Castro Ruz, Fidel. *Face to Face with Fidel Castro: A Conversation with Tomás Borge*, trans. Mary Todd. Melbourne: Ocean Press, 1993.
- Castro Ruz, Fidel. *Che: A Memoir by Fidel Castro*. David Deutschmann (ed). Melbourne: Ocean Press, 1994.
- Castro Ruz, Fidel. *La Historia Me Absolverá: Edición Anotada*, edición y notas Pedro Álvarez Tabío y Guillermo Alonso Fiel. La Habana: Oficina de Publicaciones del Consejo de Estado, 2005.
- Castro Ruz, Fidel. *My Early Years*, ed. Deborah Shnookal and Pedro Álvarez Tabío. Melbourne: Ocean Press, 2005.
- Castro Ruz, Fidel. *My Life*. Trans. Andrew Hurley, ed. Ignacio Ramonet. London: Allen Lane, 2007.
- Cupull, Adys and Froilan González. *Entre Nosotros*. La Habana: Ediciones Abril, 1992.
- Escalante, Fabián. *La Guerra Secreta: Cronología del Crimen 1959–2000*. La Habana: Imágenes, 2005.
- Gutiérrez Alea, Tomás (dir.) *La Muerte de Un Burócrata*. La Habana: ICAIC, 1968.
- Gutiérrez Alea, Tomás (dir.) *Memorias de Subdesarrollo*. La Habana: ICAIC, 1971.
- Guzmán Pascual, Arturo. 'La Acción del Comandante Ernesto Guevara en el Campo Industrial', *Revista Bimestre Cubana*, No. 8, 1998. La Habana: Sociedad Económica Amigos del País.
- Hart Dávalos, Armando. *Un Deber con el Che: Vertebrar Cultura y Economía*. Paper given on 41st anniversary of the Faculty of Economics in the University of Havana, 18 December 2003.
- Hart Dávalos, Armando. *Aldabonazo: Inside the Cuban Revolutionary Underground 1952–58: A Participant's Account*. London: Pathfinder, 2004.
- Kalatozov, Mikhail. *Soy Cuba*. La Habana: Mosfilm, 1964.
- Núñez Jiménez, Antonio. *En Marcha con Fidel 1960* (2nd edn). La Habana: Ciencias Sociales, 2003.
- Oltuski, Enrique. *Gente del Llano*. La Habana: Imagen Contemporánea, 2000.
- Oltuski, Enrique. *Vida Clandestina: My Life in the Cuban Revolution*, trans. Thomas and Carol Christensen. New York: Wiley, 2002.
- Oltuski, Enrique. *Pescando Recuerdos* (2nd edn). La Habana: Casa Editora Abril, 2006.
- Rodríguez Camps, Arnol. *Operación Fangio*. La Habana: Ciencias Sociales, 2005.
- Rodríguez, Carlos Rafael. *Letra con Filo*, Vols 1–3. La Habana: Ciencias Sociales, 1983.
- Sáenz, Tirso W. *El Che Ministro: Testimonio de un Colaborador*. La Habana: Ciencias Sociales, 2005.

Journals and newspapers

- Bohemia*. Año 51:2, 11 January 1959. Weekly, Havana.
- Bohemia*. Año 51:3, 18–25 January 1959. Weekly, Havana.
- Bohemia*. Año 51:5, 1 February 1959. Weekly, Havana.
- Bohemia*. Año 51:8, 22 February 1959. Weekly, Havana.
- Bohemia*. Año 51:13, 29 March 1959. Weekly, Havana.
- Bohemia*. Año 51:14, 5 April 1959. Weekly, Havana.
- Bohemia*. Año 51:21, 24 May 1959. Weekly, Havana.
- Bohemia*. Año 51:23, 7 June 1959. Weekly, Havana.
- Bohemia*. Año 51:42, 18 October 1959. Weekly, Havana.
- Bohemia*. c.1959. Date missing. Weekly, Havana.
- Cuba Socialista*, Año I:2, October 1961. Monthly, Havana.
- Cuba Socialista*, Año I:3, November 1961. Monthly, Havana.
- Cuba Socialista*, Año I:4, December 1961. Monthly, Havana.
- Cuba Socialista*, Año II:12, August 1962. Monthly, Havana.
- Cuba Socialista*, Año III:26, October 1963, Monthly, Havana.
- Cuba Socialista*, Año III:27, November 1963, Monthly, Havana.
- Cuba Socialista*, Año IV:29, January 1964. Monthly, Havana.
- Cuba Socialista*, Año IV:30, February 1964. Monthly, Havana.
- Cuba Socialista*, Año IV:35, July 1964. Monthly, Havana.
- Cuba Socialista*, Año V:41, January 1965. Monthly, Havana.
- Cuba Socialista*, Año V:43, March 1965. Monthly, Havana.
- Cuba Socialista*, Año V:44, April 1965. Monthly, Havana.
- Dario de la Marina*, 26 July 1959. Daily newspaper. Havana.
- Deutschmann, David and Javier Salado (eds). *Ernesto Che Guevara: El Gran Debate: Sobre la economía en Cuba 1963–1964*. Melbourne: Ocean Press, 2003. This is a collection of journal articles from the period.
- El Militante: Revista Mensual del PURS* [Partido Unido de la Revolución Socialista] de Oriente. Año 1:4 1964.
- El Mundo*, 16 October 1967. Havana.
- El Mundo: suplementa cultural*, 8 October 1968. Weekly, Havana.
- Girón*, 8 October 1969. Weekly, Matanzas.
- Granma*, 8 October 1967. Daily, Havana.
- Granma: edición especial*, 16 October 1967. Daily, Havana.
- Granma: edición especial*, 19 October 1967. Daily, Havana.
- Granma: edición especial*, 23 October 1967. Daily, Havana.
- Granma*, 29 Julio 1968. Daily, Havana.
- Granma: edición especial*. 10 October 1968. Daily, Havana.
- Granma: suplemento especial*, 8 October 1969. Daily, Havana.
- Información*, 28 July 1959. La Habana.
- Juventud Rebelde*, 16 October 1967. Daily, Havana.
- Juventud Rebelde*, 21 October 1967. Daily, Havana.
- Juventud Rebelde*, 7 October 1968. Daily, Havana.
- Juventud Rebelde*, 8 October 1968. Daily, Havana.
- La Gaceta de Cuba*, September–October 1967. Monthly, Havana.
- Nuestra Industria*, Revista de Ministerio de Industrias, Año 3:1, January 1963.
- Nuestra Industria*, Revista de Ministerio de Industrias. Año 3:2, February 1963.
- Nuestra Industria*, Revista de Ministerio de Industrias, Año 3:3, March 1963.

- Nuestra Industria*, Revista de Ministerio de Industrias, Año 3:4, April 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:5, May 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:6, June 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:7, July 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:8, August 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:9, September 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:10, October 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:11, November 1963.
Nuestra Industria, Revista de Ministerio de Industrias, Año 3:12, December 1963.
Revolución, 10 November 1959. Havana.
Revolución, 2 December 1959. Daily, Havana.
Revolución: El Che en el Escambray, December 1962. Havana.
 Silverman, Bertram (ed.). *Man and Socialism in Cuba: The Great Debate*. New York: Atheneum, 1971.

Recent speeches, articles and documents

- Arcos Bergnes, Ángel. Speech in homage to Che Guevara, CUPET, Havana, 9 October 2007.
 Borrego, Orlando Díaz. Speech in homage to Che Guevara, Escuela de Trabajadores Social, Havana, 8 October 2007.
 Castro, Fidel Ruz. 'Speech to Student Leaders, University of Havana', *Juventud Rebelde: tabloide especial*, No. 11, 17 November 2005.
 Castro, Raúl Ruz. 'Speech in Camagüey, July 26', *Granma Internacional*, 5 August 2007.
 Castro, Raúl Ruz. 'Speech, October 15', *Juventud Rebelde*, 16 October 2007.
 Castro, Raúl Ruz. 'Speech to the National Assembly', *Granma Internacional*, 20 July 2008.
 Comité Ejecutivo del Consejos de Ministros, *Decreto*, No. 281, Havana, 2007.
 Hernández Serrano, Luis. 'Un hacho de Cuaba multiplicado por mil', *Juventud Rebelde*, 7 October 2004.
 Hernández Serrano, Luis. 'Un tesoro de ciencia creado por el Che', *Juventud Rebelde*, 14 June 2007.
 Juventud Rebelde Opinión. 'Entre el níquel y Shakespeare', *Juventud Rebelde*, 5 March 2005.
 López Jiménez, Tomas. 'Los Cubanos tenemos una Inteligencia para Dominar la Computación', *Juventud Rebelde*, 9 March 2006.
 Mangüela Díaz, Gabino. 'Los Tiempos de Reinaldo', *Trabajadores*, Havana, 2 January 2006.
 Milagros Román González. *El Che y la Andragogía en la Capacitación de los Cuadros*. <www.sld.cu/galerias/pdf/sitios/infodir/che_temas.pdf>.
 Morales, Isabel. Historia de la Industria Petrolera en Cuba. <www.energia.inf.cu/iee-mep/otros/histopetro.PDF.pdf>.
 Pérez Roque, Felipe. 'Informe de Cuba sobre la Resolución 60/12 de la Asamblea General de las Naciones Unidas', *Juventud Rebelde: tabloide especial*, No. 8, 2006.
 Pérez Roque, Felipe. 'Speech to the National Assembly', *Granma*, 23 December 2005.
 Rodríguez, José Luís. *Speech to the Ministry of the Economy*. Havana, 8 October 2007.

Outside Cuba

Government documents

- Academia de Ciencias de la URSS. *Manual de Economía Política*, trans. Wenceslao Roces (2nd edn) La Habana: Instituto de Economía, 1961.
- British Embassy in Havana. *Top Personalities in Cuba*, Havana. 20 September 1967. National Archives document FCO 7/529 211465.
- British Embassy in Havana. *Top Personalities in Cuba*. Havana, 26 August 1968. National Archives document FCO 7/529 211465.
- International Bank for Reconstruction and Development. *Report of the Mission to Cuba, July 1951*. Washington, DC: Office of the President.
- Priestland, Jane (researcher). *British Archives on the Cuban Missile Crisis 1962*. London: Archival Publications International, 2001.
- Prime Minister's Personal Minutes on Cuba*, London, 1960–61. National Archives. PREM 11/3688 C211465.
- The Cuban Economy in 1961 and 1962 and Prospects for 1963 through 1964*, 19 January 1963, CIA/RR CB 63–10. Washington. <www.yale.edu/lawweb/avalon/diplomacy/forrell/cuba/cuba296.htm>.
- US Department of Commerce. *Investment in Cuba: Basic Information for United States Businessmen*. Washington, DC: GPO, 1956.

Testimony and contemporary accounts

- Baran, Paul A. *Reflections on the Cuban Revolution*. New York: Monthly Review Press, 1961.
- Boorstein, Edward. *The Economic Transformation of Cuba: A First Hand Account*. New York: Modern Reader Paperback, 1968.
- Cuba Under Castro: Ambassadorial Reflections. Seminar at Institute of Latin American Studies, 5 November 2003, University of London.
- Dumont, Rene. *Is Cuba Socialist?*, trans. Stanley Hochman. London: Andre Deutsch, 1974.
- Huberman, Leo and Paul M. Sweezy. *Cuba: Anatomy of a Revolution* (2nd edn). New York: Modern Reader Paperback, 1969.
- Huberman, Leo and Paul M. Sweezy. *Socialism in Cuba*. New York: Monthly Review Press, 1969.
- Karol, K. S. *Guerrillas in Power*, trans. Arnold Pomerans. London: Jonathan Cape, 1971.
- Sartre, Jean-Paul. *Sartre on Cuba*. New York: Ballantine Books, 1961.
- Smith, Wayne S. *The Closest of Enemies: A Personal and Diplomatic Account of US–Cuban Relations Since 1957*. London: W. Norton & Company, 1987.
- Yglesias, Jose. *In the Fist of the Revolution: Life in Castro's Cuba*. London: Pelican, 1970.

SECONDARY SOURCES

About Guevara

- Agüero, Luis et al. *Che Comandante: Biografía de Enresto Che Guevara*. Mexico: Diógenes, 1969.

- Anderson, Jon Lee. *Che Guevara: A Revolutionary Life*. New York: Grove Press, 1997.
- Ariet García, Maria del Carmen. *El Pensamiento Político de Ernesto Che Guevara*. Melbourne: Ocean Press, 2003.
- Ariet García, Maria del Carmen. Interview, 20 January 2005. Havana.
- Ariet García, Maria del Carmen. *Una Aproximación a la Periodización de la Vida y Obra de Ernesto Che Guevara*. Melbourne: Ocean Press (no date).
- Barrio, Hilda and Gareth Jenkins. *The Che Handbook*. London: MQ Publications, 2003.
- Castañeda, Jorge. *Compañero: The Life and Death of Che Guevara*, uncorrected proof copy. London: Bloomsbury, 1997.
- Childs, Matt D. 'An Historical Critique of the Emergence and Evolution of Ernesto Che Guevara's Foco Theory', *Journal of Latin American Studies*, Vol. 27:3, October 1995, 593–624.
- Cole, Ken. 'Hasta la Victoria Siempre: The Legacy of Ernesto Che Guevara'. Unpublished paper (no date).
- Cole, Ken. 'The Cuban Revolution: Martí's insight, Marx's theory and Guevara's practice: Lessons for Socialist Development in the 21st century'. Unpublished paper, January 2004.
- Conferencia teórica sobre el pensamiento económico del Comandante Ernesto Che Guevara*. La Habana: Editora Política. 1990.
- Delgado Díaz, Carlos Jesús. *Diccionario Temático: Ernesto Che Guevara*. La Habana: Ciencias Sociales, 2000.
- Gambini, Hugo. *El Che Guevara*, Buenos Aires: Paidós, 1968.
- Génesis multimedia. *Che por Siempre* (DVD). Havana, 2001.
- González, Mike. *Che Guevara and the Cuban Revolution*. London: Bookmarks, 2004.
- Hardt, Hanno, Luis Rivera-Pérez and Jorge A. Calles-Santillana. 'Death and Resurrection of Ernesto Che Guevara: US Media and the Deconstruction of a Revolutionary Life', *Cuba Lives*, <www.che-lives.com> (no date).
- Hernández Heredia, Fernando. *Che, el Socialismo y el Comunismo*. La Habana: Casa de Las Américas, 1989.
- Hernández Heredia, Fernando. Seminar. Los pensamientos filosóficos de Ernesto Che Guevara. Diplomado: Pensamiento Latinoamericano, Che Guevara. Facultad Latinoamericana de Ciencias Sociales (FLACSO), 19 January 2006, Havana University, Havana.
- Lavretsky, I. *Ernesto Che Guevara*, trans. A. B. Eklof (2nd edn). Moscow: Progress Publishers, 1976.
- Lizárraga, Fernando. 'Che and the Socialist Tradition: a reply to Mike González'. *International Socialism*, Vol. 106, 2005.
- Lowy, Michael. *The Marxism of Che Guevara: Philosophy, Economics and Revolutionary Warfare*, trans. Brian Pearce. London: Monthly Review Press, 1973.
- Martínez Hernández, Tatiana. 'Socialismo y Hombre Nuevo'. Unpublished thesis, 1994. Universidad de Habana: Habana.
- Martínez Hernández, Tatiana. 'El Marxismo del Che'. Paper given at the Instituto Pedagógico para la Educación Técnica y Profesional, October 2005, Havana.

- McLaren, Peter. 'Che Guevara, Paulo Freire, and the Politics of Hope: Reclaiming Critical Pedagogy', *Cultural Studies-Critical Methodologies*, Vol 1: 1 (2000). <http://www.che-lives/home>.
- Mercedes Guillot and Ibrahim Malleri Hernández. *Che the Heroic Guerrilla Fighter: 39 Years of an Intense and Virtuous Life*. La Habana: Editoria Política, 1997.
- Mi Guevara*. Suplemento Especial. Revista Cuba Internacional. La Habana: Prensa Latina, 1997.
- Molina Molina, Ernesto. 'El Pensamiento Económico de Ernesto Che Guevara y el llamado 'mecanismo económico' del socialismo'. Chapter from unpublished book, 2005.
- Mundo Latino. *Video biografía sobre el Che Guevara*, videos 1–5. La Habana: Mundo Latino. 1997.
- Pensar el Che: Desafíos de la Lucha por el Poder Político*. Recopilación Centro de Estudios sobre América, Vol. II. La Habana: Editorial José Martí, 1989.
- Pensar el Che: Los Retos de La Transición Socialista*. Recopilación Centro de Estudios sobre América, Vol. I. La Habana: Editorial José Martí, 1989.
- Sandison, David. *Che Guevara* (4th edn). London: Chancellor Press, 2005.
- Sinclair, Andrew. *Guevara*. London: Fontana, 1970.
- Soto Acosta, Jesús (ed.). *Che: Una Vida y Un Ejemplo*. La Habana: Comisión de Estudios Históricos de la UJC, 1968.
- Sotolongo, Pedro Luis. *Ernesto Che Guevara: Ethics and Aesthetics of an Existence*. La Habana: Editorial José Martí, 2002.
- Suárez Salazar, Luis (ed.). *Actualidad del Che*. La Habana: Ediciones Libertarias, 1999.
- Tablada Pérez, Carlos. *Che Guevara: Economics and Politics in the Transition to Socialism* (2nd edn). New York: Pathfinder, 1990.
- Tablada Pérez, Carlos. Interview, 11 February 2006, Havana.
- Taibo II, Paco Ignacio. *Guevara: Also Known as Che*, trans. Martin Roberts. New York: St Martin's Griffin, 1997.
- Walter Salles (dir). *The Motorcycle Diaries*. Film Four & Pathe, 2004.
- Waters, Mary-Alice (ed.) et al. 'Che Guevara: Cuba and the Road to Socialism', *New International: Magazine of Marxist Politics and Theory*, No. 8. New York: Pathfinder, 1991.
- Yaffe, Helen. 'Ernesto "Che" Guevara: Socialist Political Economy and Economic Management in Cuba, 1959–1965'. PhD thesis, London School of Economics, 2008.

About Cuba

- Alonso Aurelio. 'Interview with Manuel Alberto Ramy', Progreso Weekly, 11–17 September 2007.
- Benjamin, Jules R. *The United States and the Origins of the Cuban Revolution: An Empire of Liberty in an Age of National Liberation*. Princeton: Princeton University Press, 1990.
- Bernardo, Robert M. *The Theory of Moral Incentives in Cuba*. Alabama: University of Alabama Press, 1971.
- Bethell, Leslie (ed.). *Cambridge History of Latin America, c. 1870 to 1930*, Vol. 5. Cambridge: Cambridge University Press, 1986.

- Blackburn, Robin. 'Prologue to the Cuban Revolution?', *New Left Review*, No. 21, 1963, 52–91.
- Bonachea, Ramon L and Marta San Martin. *The Cuban Insurrection 1925–1959*. New Brunswick, NJ: Transaction Books, 1974.
- Brundenius, Claes. *Revolutionary Cuba: The Challenge of Economic Growth with equity*. London: Westview Press, 1984.
- Brundenius, Claes. 'Whither the Cuban Economy after Recovery? The Reform Process, Upgrading Strategies and the Question of Transition', *Journal of Latin American Studies*, Vol. 34:2, 2002, 365–95.
- Case Studies in Sanctions and Terrorism: Cuba 60–3. US v Cuba*. Institute for International Economics, <www.iie.com/research/topics/sanctions/cuba3.cfm>.
- Centro de Estudios Sobre America. *The Cuban Revolution into the 1990s*, trans. Anibal Yanez. Latin American Perspectives Series, No. 10. Colorado: Westview Press, 1992.
- César Mascaros, Julio. *Historia de la Banca en Cuba (1492–2000)*. La Habana: Ciencias Sociales, 2004.
- Chilote, Ronald H (ed.). *The Cuban Revolution into the 1990s*, trans. Anibal Yanez. Latin American Perspectives Series, No. 10. Colorado: Westview Press, 1992.
- Codina Jiménez, Alexis. 'Worker Incentives in Cuba', *World Development*, Vol. 15:1, 1987, 127–38.
- Cole, Ken. 'Cuba: The Process of Socialist Development', *Latin American Perspectives*, Vol. 29:3, 2002, 40–56.
- Cuba Demanda al Gobierno de Estados Unidos por Daños Humanos*. La Habana: Editora Política, 1999.
- Dilla, Haroldo (compilador). *La democracia en Cuba y el diferendo con los Estados Unidos*. La Habana: Centro de Estudios sobre América, 1995.
- Domínguez, Jorge I. *Cuba: Order & Revolution*. Cambridge, Mass: Harvard University Press, 1978.
- Farber, Samuel. *Revolution and Reaction in Cuba, 1933–1960: A Political Sociology from Machado to Castro*. Connecticut: Middletown, 1976.
- Farber, Samuel. 'The Cuban Communists in the Early Stage of the Cuban Revolution', *Latin American Research Review*, Vol. 18:1, 1983, 59–83.
- Farber, Samuel. *The Origins of the Cuban Revolution Reconsidered*. North Carolina: North Carolina Press, 2006.
- Foner, Philip. *A History of Cuba and its relations with the United States*, Vols 1 and 2. New York: International Publishers, 1962.
- Foner, Philip (ed.). *Our America by Jose Marti*, trans. Elinor Randall. London: Monthly Review Press, 1977.
- Franklin, Jane. *Cuba and the United States: A Chronological History*. Melbourne: Ocean Press, 1997.
- Gainsbury, Sally. 'The "Great Debate" as the Fulcrum of Competing Narratives of the Cuban Revolution'. PhD thesis, Wolverhampton University, 2005.
- García Oliveras, Julio. *José Antonio Echeverría: la lucha estudiantil contra Batista*. La Habana: Editoria Política, 1979.
- García Oliveras, Julio. *José Antonio*. La Habana: Editora Abril, 1988.
- Gillespie, Richard (ed.). *Cuba after Thirty Years: Rectification and the Revolution*. London: Frank Cass, 1990.

- Gleijeses, Piero. 'A History Worthy of Pride', *Tricontinental Revista*, <www.tricontinental.cubaweb.cu/REVISTA/texto20ingl.html> (no date).
- Gleijeses, Piero. *Conflicting Missions: Havana, Washington and Africa, 1959–1976*. Chapel Hill: University of North Carolina Press, 2002.
- González Rodríguez, Lázaro. 'Los estímulos morales y materiales en el desarrollo económico y la formación del hombre nuevo'. Unpublished paper. 2004.
- Gott, Richard. *Cuba: A New History*. New Haven, CT: Yale University Press, 2004.
- Guzmán, Hugo. 'El chileno que trabajó con el Che', *La Nación Domingo*, 7 October 2007.
- Hamilton, Douglas. 'Whither Cuban Socialism? The Changing Political Economy of the Cuban Revolution', *Latin American Perspectives*, Vol. 18:3 2002, 18–39.
- Hernandez, Rafael. 'Looking at Cuba: Notes Towards a Discussion', trans. Dick Cluster, *Boundary 2*, Vol. 29:3, 2002, 123–36.
- Helge, A. *A Nation for All: Race, Inequality and Politics in Twentieth-Century Cuba*. North Carolina: University of North Carolina Press, 2001.
- Historia del Movimiento Obrero Cubano, Tomo II, 1935–1958*. La Habana; Editora Política, 1985.
- Jiménez, Guillermo. *Las Empresas de Cuba 1958*. La Habana: Ciencias Sociales, 2005.
- Johnston, Laurie. 'Cuban Nationalism and Responses to Private Education in Cuba, 1902–1958', in Will Fowler (ed.) *Ideologues and Ideologies in Latin America*. Westport, CT: Greenwood Press, 1997.
- Judson, C. Fred. *Cuba and the Revolutionary Myth: The Political Education of the Cuban Rebel Army, 1953–1963*. Colorado: Westview Press, 1984.
- Kapcia, Antoni. 'Cuban Populism and the Birth of the Myth of Martí', in Christopher Abel and Nissa Torrents (eds) *Jose Martí-Revolutionary Democrat*. London: Athlone, 1986.
- Kapcia, Antoni. *Island of Dreams*. Oxford: Berg, 2000.
- Kapcia, Antoni. 'Education, Culture and Identity in Cuba: appraising the role of education in shaping and defining society'. Paper presented at the Institute for the Study of the Americas, University of London, 29 October 2004.
- Karl, Terry. 'Work Incentives in Cuba', *Latin American Perspectives*, Vol. 2:4, 1975, 21–41.
- Kaye, Jacqueline (ed.). *The New Man in Cuba*. Collection of writings to serve as an introduction to a seminar organised by the British Cuba Association at the Africa Centre in London, November 1969.
- Leogrande, William M. and Julie M. Thomas. 'Cuba's Quest for Economic Independence', *Journal of Latin American Studies*, Vol. 34:2, 2002, 325–63.
- London Metropolitan University. *Cuban Reforms Summary*, 4 April 2007, <www.londonmet.ac.uk/londonmet/library/a14556_24.doc>.
- MacDonald, Theodore. *Hippocrates in Havana: An Analytical and Expository Account of the Development of the Cuban System of Healthcare from the Revolution to the Present Day*. Mexico City: Bolivar Books, 1995.
- Matthews, Herbert L. *Castro: A Political Biography*. London: Penguin, 1970.
- Maingot, Anthony P. 'A Question of Methodology: Review Essay on Recent Literature on Cuba', *Latin American Research Review*, Vol. 13:1, 1978, 225–47.
- Mesa-Lago, Carmelo. 'Economic Significance of Unpaid Labor in Socialist Cuba', *Industrial and Labor Relations Review*, Vol. 22:3, April 1969, 339–57.

- Mesa-Lago, Carmelo. 'Ideological, Political and Economic Factors in the Cuban Controversy on Material Versus Moral Incentives', *Journal of Interamerican Studies and World Affairs*, Vol 14:1 February 1972, 49–111.
- Mesa-Lago, Carmelo. *Cuba in the 1970s: Pragmatism and Institutionalization*. Albuquerque: University of New Mexico Press, 1974.
- Mesa-Lago, Carmelo (ed.). *Cuban Studies* 5. Centre for Latin American Studies. Pittsburg: University of Pittsburg Press, 1975.
- Mesa-Lago, Carmelo (ed.). *Cuban Studies* 6. Centre for Latin American Studies. Pittsburg: University of Pittsburg Press, 1976.
- Mesa-Lago, Carmelo (ed.). *Cuban Studies* 16. Centre for Latin American Studies. Pittsburg: University of Pittsburg Press, 1986.
- Mesa-Lago, Carmelo (ed.). *Cuban Studies* 17. Centre for Latin American Studies. Pittsburg: University of Pittsburg Press, 1987.
- Mesa-Lago, Carmelo (ed.). *Cuban Studies* 18. Centre for Latin American Studies. Pittsburg: University of Pittsburg Press, 1988.
- Mesa-Lago, Carmelo. 'The Cuban Economy in 2006–2007: Fidel's Legacy and Raul's Policies'. Paper presented at the Association for the Study of the Cuban Economy annual conference, 2–4 August 2007.
- Monreal González, Pedro. Interview, *La Noche Se Mueve*, 25 September 2007, Montreal.
- Moreno Friginals, Manuel. *The Sugarmill: The Socioeconomic Complex of Sugar 1790–1869*. London: Monthly Review Press, 1976.
- Moreno Friginals, M. 'Plantation Economies and Societies in the Spanish Caribbean, 1860–1930', in L. Bethell (ed.) *Cambridge History of Latin America*, Vol IV. Cambridge: Cambridge University Press, 1986.
- Morley, Morris H. *Imperial State and Revolution: The United States and Cuba, 1952–1986*. Cambridge: Cambridge University Press, 1987.
- Morris, Emily. *Cuba: Country Report May 2007*. London: Economist Intelligence Unit, 2007.
- Morris, Emily. *Cuba: Country Profile*. London: Economist Intelligence Unit, 2007.
- Nuiri, Juan. *¡Presente! Apuntes Para La Historia Del Movimiento Estudiantil Cubano*. La Habana: Editoria Política, 2002.
- Ospina Calvo, Hernando. *Bacardi: The Hidden War*, trans. Stephen Wilkinson and Alasdair Holden. London: Pluto Press, 2002.
- Perez Jr, Louis A. 'In the Service of the Revolution: Two Decades of Cuban Historiography 1959–1979', *Hispanic American Historical Review*, Vol. 60:1, 1980, 79–89.
- Pérez-López, Jorge F. *Cuba at a Crossroads: Economics and Politics after the Fourth Party Congress*. Miami: University of Florida Press, 1994.
- Pérez-Stable, Marifeli. *The Cuban Revolution: Origins, Course and Legacy* (2nd edn). New York: Oxford University Press, 1999.
- Pollit, Brian H. 'Sugar, "Dependency" and the Cuban Revolution', *Development and Change*, Vol. 17, 1986, 195–230.
- Pollit, Brian H. 'The Rise and Fall of the Cuban Sugar Economy', *Journal of Latin American Studies*, Vol. 36, 2004, 319–48.
- Pollit, Brian H. and G. H. Hagelberg. 'The Cuban Sugar Economy in the Soviet Era and After', *Cambridge Journal of Economics*, Vol. 18:6, 1994, 547–69.
- Reason, Barbara, Margaret B. Mughisuddin and Bum-Joon Lee Park. *Cuba Since Castro: A Bibliography of Relevant Literature*. Washington: Special Operations

- Research Office. The American University (operating under contract with the Department of the Army), 1962.
- Ricardo, Roger. *Guantánamo: The Bay of Discord. Story of the US Military Base in Cuba*, trans. Mary Todd. Melbourne: Ocean Press, 1994.
- Smith, Robert Freeman (ed.). *Background to Revolution: The Development of Modern Cuba*. New York: Alfred A. Knopf, 1966.
- Smith, Robert Freeman. 'Twentieth Century Cuban Historiography', *Hispanic American Historical Review*, Vol. 44:1, 1964, 44–73.
- Stubbs, Jean, Lila Haines and Meic F. Haines (compilers). *Cuba*, Vol. 75. Oxford: Clio Press, 1993.
- Stubbs, Jean. *Cuba: The Test of Time*. London: Latin American Bureau, 1989.
- Stubbs, Jean. 'Social Equity, Agrarian Transition and Development in Cuba, 1945–90', in Christopher Abel and Colin Lewis (eds) *Exclusion and Engagement: Social Policy in Latin America*. London: Institute of Latin American Studies, 2002.
- Suchlicki, Jaime. *Cuba: From Columbus to Castro*. New York: Pergamon-Brassey's, 1986.
- Sweig, Julia E. *Inside the Cuban Revolution: Fidel Castro and the Urban Underground*. Cambridge, Mass.: Harvard University Press, 2002.
- Thomas, Hugh. *Cuba: Or the Pursuit of Freedom*. London: Eyre and Spottiswoode, 1971.
- Torres, Ivette E. *The Mineral Industry of Cuba*, <<http://minerals.usgs.gov/minerals/pubs/country/1998/9509098.pdf>>.
- Torres, Simon and Julio Aronde. 'Debray and the Cuban Experience', *Monthly Review*, Vol. 20:3, 1968.
- Valdés, Orlando. *Historia de la Reforma Agraria en Cuba*. La Habana: Ciencias Sociales, 2003.
- Whitehead, Laurence. 'On Cuban Political Exceptionalism'. Paper presented to conference at Pell Center for International Relations and Public Policy. March 2003.
- Yaffe, Helen. 'From Student Protest to Revolution: The Movement against Batista, 1950s Cuba'. MSc. dissertation, London School of Economics, 2002.
- Zimbalist, Andrew (ed.). *Cuban Political Economy: Controversies in Cubanology*. London: Westview Press, 1988.

Theory

- A Handbook of Marxism* (3rd edn). London: Camelot Press, 1937.
- Bettelheim, Charles, 'On the Transition between Capitalism and Socialism' and reply by Paul Sweezy. *Monthly Review*, Vol. 20:10, 1969, 1–19.
- Bettelheim, Charles. 'More on the Society of Transition' and Reply by Paul Sweezy. *Monthly Review*, Vol. 22:7, 1970, 1–22.
- Brenner, Robert. 'The Origins of Capitalist Development: A Critique of Neo-Smithian Marxism', *New Left Review*, No. 104, 1977, 25–92.
- Bukharin, N. and E. Preobrazhensky. *The ABC of Communism*. London: Penguin Books, 1969.
- Buroway, Michael. 'Marxism as Science: Historical Challenges and Theoretical Growth', *American Sociological Review*, Vol. 55:6, 1990, 775–93.
- Cardoso, Fernando Henrique. 'Dependency and Development in Latin America', *New Left Review*, No. 74, 1972, 83–95.

- Carr, Edward Hallet, *What is History?* London: Penguin, 1970.
- Cole, Ken. 'Marxist Theory and Socialist Development'. Twelve-week seminar programme presentation, Norwich, University of East Anglia, 2004.
- Cole, Ken. 'The Cuban Revolution: Martí's Insight, Marx's Theory and Guevara's Practice; Lessons for Socialist Development in the 21st century'. Paper given at the II Conferencia Internacional: La Obra de Carlos Marx y los Desafíos del Siglo XXI, May 2004, Havana.
- Davis, Harold Eugene. 'The History of Ideas in Latin America', *Latin American Research Review*, Vol. 3:4, 1968, 23–44.
- Desai, Meghnad (ed.). *Lenin's Economic Writings*. London: Lawrence and Wishart, 1989.
- Desai, Meghnad. *Marx's Revenge: The Resurgence of Capitalism and the Death of Statist Socialism*. London: Verso, 2002.
- Emmanuel, Arghiri. 'Myths of Development versus Myths of Underdevelopment', *New Left Review*, No. 85, 1972, 35–57.
- Engels, Frederick. *Socialism: Utopian and Scientific*. Peking: Foreign Languages Press, 1975.
- Gerschenkron, Alexander. *Economic Backwardness in Historical Perspective: A Book of Essays*. Cambridge, Mass: Belknap Press of Harvard University Press, 1962.
- Gunder Frank, Andre. *Capitalism and Underdevelopment in Latin America*. London: Penguin, 1969.
- Hobsbawm, Eric. *The History of Marxism*, Vol. 1. Brighton: Harvester Press, 1982.
- Hobsbawm, Eric. *On History*. London: Weidenfeld & Nicolson, 1997.
- Laclau, Ernesto. *Politics and ideology in Marxist Theory: Capitalism, Fascism, Populism*. London: New Left Books, 1977.
- Lenin, Vladimir I. 'A Caricature of Marxism and Imperialist Economism', *Collected Works*, Vol. 23. London: Lawrence and Wishart, 1964, 28–75.
- Lenin, Vladimir I. *Problems of Building Socialism and Communism in the USSR* (3rd edn). Moscow: Progress Publishers, 1973.
- Lenin, Vladimir I. *Imperialism: the Highest Stage of Capitalism*. Moscow: Progress Publishers, 1975.
- Lenin, Vladimir I. *The State and Revolution: The Marxist Theory of the State and the Tasks of the Proletariat in the Revolution*. Moscow: Progress Publishers, 1977.
- Martz, John D. 'Doctrine and Dilemmas of the Latin American "New Left"', *World Politics*, Vol. 22:2, 1970, 171–96.
- Marx, Karl. *A Contribution to the Critique of Political Economy*, trans. N. I. Stone. Chicago: Charles H. Kerr & Company, 1904.
- Marx, Karl. *The Civil War in France*. London: Garden City Press, 1933.
- Marx, Karl. *The Poverty of Philosophy*. London: Lawrence and Wishart, 1956.
- Marx, Karl. *Economic and Philosophic Manuscripts of 1844*. London: Lawrence and Wishart, 1959.
- Marx, Karl. *Critique of the Gotha Programme*. Peking: Foreign Languages Press, 1972.
- Marx, Karl. *Capital*, Vol. 1, trans. Ben Fowkes. London: Penguin Books, 1976.
- Marx, Karl and Frederick Engels. *Ireland and the Irish Question*. Moscow: Progress Publishers, 1971.
- Marx, Karl and Frederick Engels. *Manifesto of the Communist Party*. Moscow: Progress Publishers, 1975.

- Munk, Ronaldo. 'Imperialism and Dependency: Recent Debates and Old Dead-Ends', *Latin American Perspectives*, Vol. 8:3-4, 1981, 162-79.
- Nolte, Ernst. 'The Relationship between "Bourgeois" and "Marxist" Historiography', *History and Theory*, Vol. 14:1, February 1975, 57-73.
- Pfeffer, Richard M. 'Mao and Marx in the Marxist-Leninist Tradition: A Critique of "The China Field" and a Contribution to a Preliminary Reappraisal', *Modern China*, Vol. 2:4, October 1976.
- Reed, David. *Ireland: the Key to the British Revolution*. London: Larkin Publications, 1984.
- Stalin, Joseph V. *Economic Problems of Socialism in the USSR*. Peking: Foreign Languages Press, 1972.
- Sweezy, Paul. 'Czechoslovakia, capitalism and socialism', *Monthly Review*, Vol. 20:5, 1968, 5-16.
- Sweezy, Paul. 'The Transition to Socialism', *Monthly Review*, Vol. 23:1, 1971, 1-17.
- Warren, Bill. 'Imperialism and Capitalist Industrialization', *New Left Review*, No. 81, 1973, 3-44.
- Warren, Bill. *Imperialism: Pioneer of Capitalism*, London: New Left Books and Verso, 1980.
- Wolpe, Harold (ed.). *The Articulation of Modes of Production*. London: Routledge and Kegan Paul, 1980.
- Yaffe, David. 'Value & Price in Marx's Capital', *Revolutionary Communist*, No. 1, May 1976. London: RCG Publications.

Psychology and miscellaneous

- Arias Beaton, Guillermo. *El Centro de Orientación y Atención Psicológica "Alfonso Bernal del Riesgo" de la Facultad de Psicología de la Universidad de Havana*, <www.uh.cu/facultades/psico/resecoap.htm>.
- Borrego Díaz, Orlando. *La Ciencia de Dirección: Algunos Antecedentes y Enfoques Actuales*. La Habana: SUPSCER. 1989.
- 'Breves apuntes en relación con los orígenes de la psicología y la psiquiatría en Cuba', trabajo leído en mesa redonda Historia y Salud Mental, del Congreso Panamericano de Psiquiatría, Psicología Infanta Juvenil y Profesiones a Fines, La Habana, 5 March 2002, from *Revistas Medicas Cubanas*, <www.bvs.sld.cu/revistas>.
- Campo, Juan Carlos, meeting at Centro de Psicología y Sociología, 7 January 2005, Havana.
- Carroll, Rory. 'Cuban Workers to get Bonuses for Extra Effort', *Guardian*, 13 June 2008, <www.guardian.co.uk/world/2008/jun/13/cuba>.
- Chávez, Hugo. Interview, 14 October 2007, <www.cubainformacion.tv/index.php?option=com_content&task=view&id=2224&Itemid=86>.
- Lasaro, José (director), meeting at Centro de Psicología y Sociología, 11 January 2005, Havana.
- Neruda, Pablo. *Memoirs*, trans. Hardie St Martin. London: Souvenir Press. 2004.
- Partido Socialista Unido de Venezuela, Draft Program and Principles, 23 January 2008, <www.venezuelanalysis.com/analysis/3095>.
- Plotkin, Mariano Ben. 'Freud, Politics, and the Portenos: The Reception of Psychoanalysis in Buenos Aires, 1910-1943', *Hispanic American Historical Review*, Vol. 77:1, 1997, 45-74.

- Plotkin, Mariano Ben. 'The Diffusion of Psychoanalysis in Argentina', *Latin American Research Review*, Vol. 33:2, 1998, 271–7.
- Snowden, Ruth. *Teach Yourself Freud*. London: Teach Yourself, 2006.
- Valdés García, Félix. A 50 años del primer instituto Cubano de Filosofía, 1999, <www.filosofia.cu/ifc/his.htm>.
- Valdés García, Félix. 'Influencia del Pensamiento Español del exilio en la Filosofía Cubana de la Década del Cuarenta del Siglo XX', Instituto de Filosofía de Cuba, 2000, <www.filosofia.cu/ifc/his.htm>.

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